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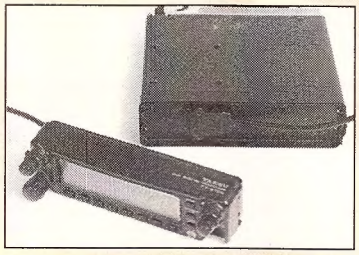

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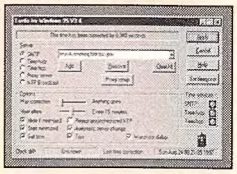

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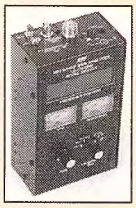

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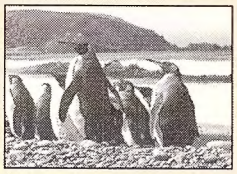

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TS-570S HF + 6M 100W RRP $2,669.80

Representing the new standard in performance by which all other transceivers will be judged, the TS-570S is the perfect middle-class rig for mobile or station operations. Designed to answer the call in any application, this heavy-duty HF transceiver boasts a large heatsink and improved heat dissipation characteristics for extra reliability. But most importantly, the TS-570S incorporates Kenwood's own 16-bit DSP AF signal processing that enables it to provide you with extremely effective interference reduction plus high quality TX and RX audio. Additionally, a central frequency control system offers high frequency stability while a large, positive-type LCD display ensures greater visibility for easy operation. Completely equipped with a preset auto antenna tuner and ideally sized, the TS-570S is sure to become standard equipment for operators who demand the very best.

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TM-V7A DUAL BANDER RRP $1,005.70

Night and day. Kenwood's new TM-V7A FM dual-band (144MHz/430MHz) transceiver is like no other. Featuring a tall, detachable control panel with four multi-function keys and a cool-blue reversible LCD, the TM-V7A represents a bold departure in ergonomic design. Visibility and operability are both exceptional and thanks to the on-board Guide you never have to look at the manual. Full marks for convenience too: the unique programmable memory can store five distinct operating profiles ready for instant recall at the push of a button. With up to 280 memory channels, built-in CTCSS, DTSS and pager functions, plus the ability to receive two frequencies on the same band, the TM-V7A is fully equipped for high-performance mobile communications.

• Data connector for 1200/9600 baud packet • Automatic band change • Auto simplex checker • AIP (Advanced Intercept Point) • 147 channel visual scan (spectrum display) • TO & CO scan stop modes • Key function display • Selectable frequency step • Auto repeater offset • Power-on message • Auto power-off • Time-out timer • Optional multi-function DTMF microphone with backlit keys (supplied with M3 type)

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TS-870S DIGITAL HF RRP $3,983.80

Kenwood's new TS-870S is a superb example of how far digital technology can transform the world of communications. The first of a new breed, this HF all-mode transceiver is equipped with powerful twin 24-bit DSP (digital signal processors) at the IF stage – an innovation that leads to such benefits as high-efficiency digital filtering, powerful noise/interference reduction, equalisers and DSP detection. The TS-870S is digital in other ways: it can be fully computer-controlled using a high-speed link. There's an antenna splitter, dual antenna connectors and an automatic antenna tuner that works on transmit and receive. All of this, plus the range of high-performance features for which Kenwood rigs are renowned. By any measure, Kenwood's TS-870S merits true distinction.

• IF-stage Digital Signal Processing & Digital Filtering • menu system • 100 memory channels • Full band scan, group scan, programmable band scan, memory scan with memory channel lock-out • TO & CO scan stop modes • SPAC noise reduction (CW/SSB) • High-speed (57,600 bps) computer control • AIP • IF auto notch • Full-featured programmable electronic keyer • Full break-in & semi-break-in • CW reverse mode • All-mode squelch • Operational digital recording (DRS) unit

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Editorial Comments...

I looked through a new Internet magazine from the US the other day and, frankly, some of it left my head reeling. Could we even have imagined, say, 10 years ago, what a juggernaut the 'Net would become? All the weird terminology, the strange new programs, the amazing uses... and for every one I have seen there must surely be dozens of others.

You know, I reckon it's something like a car or an aeroplane. You don't have to know the exact intricacies of how your car works to use it. You don't have to have an intimate understanding of the principles of lift to travel in an aircraft. You simply trust that the designers and engineers got it right, that all the bits around and under you will work the right way at the right time. So it is with computers in general and the Internet in particular.

Frankly, if you can just get the damned thing hooked up to an Internet service provider you're most of the way there. An exciting world awaits you at the other end of your phone line, that's for sure. It's a world where you can 'talk' via your keyboard to almost anyone, anywhere. You can silently and anonymously infiltrate guerilla movements, international broadcasters, corn flake manufacturers... *anything*. It's all there, waiting patiently, just a mouse click away. So how much time do you have?

So I thumbed, at times uncomprehendingly, through the new American magazine, thinking what weird people they must be to devote their lives to such things — then, satisfied, dialled into the Internet to collect today's incoming mail messages, all 232 of them! (Yeah, that's a record...) Classifieds, editorial ideas, greetings from readers, mail from a newsgroup or two dealing with DX conditions and satellites, and it all swam sharply into focus.

My missus uses the 'Net to research her favourite topics and exchange ideas with like-minded individuals around the world. The children use it as an invaluable aid to their school work (and, sob, to soak up all the latest drivel about their dreadful music groups... if that's what you can call them), then they dial into educational material and resource libraries around the globe to broaden their knowledge.

A few months back, I was trying to explain the Internet to one of the kids, a suspicious Miss Twenty, who wanted to know what sort of computer to buy, and what she could do with it. Somehow she had managed to avoid both it and much to do with computers right through her schooling. So I said okay, I'm on line. What do we look at? Right at that moment the news was burbling away in the background, and we could hear someone earnestly talking about a report from Moscow. Aha! The Kremlin. Less than a minute later we were at the doors of that imposing place off Red Square. Did we want to turn left or right in our guided tour?

Once she was *on* the 'Net, you couldn't have prised her *off* it with a crowbar. A tell-tale little counter saw the 'Net access wind up to several hundred hours in just the first couple of months.

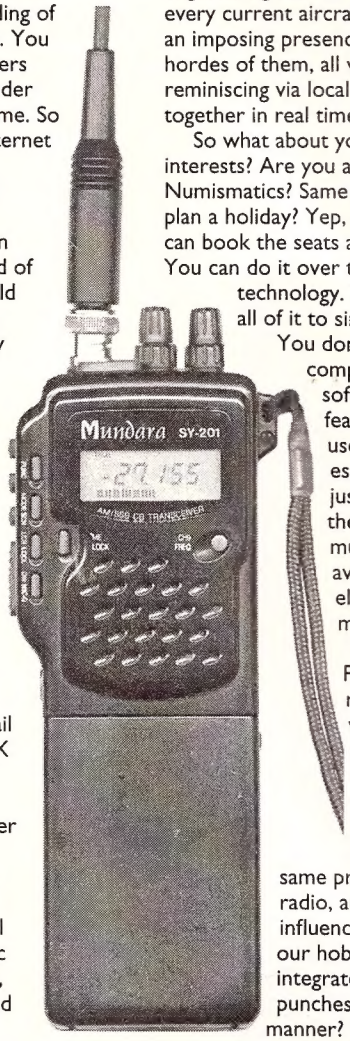
These days, you can nominate just about *any* topic and find out plenty about it over the Internet. My Dad is a retired mechanical engineer who joined the Navy during WWII. He skippered a mine sweeper afterwards, finally retiring from the Naval Reserve in 1964. He loves his footy, watches the tennis and cricket, and is besotted with aircraft. So could the 'Net be of some interest to a person like that? You bet! It's simply bristling with Naval material! And it's jammed with any amount of engineering stuff as well. There's sports aplenty... and every current aircraft manufacturer you can think of has an imposing presence there. And people. Countless hordes of them, all with the same interests as my dad, reminiscing via local and international E-mail, or chatting together in real time...

So what about you? Other than radio, what are *your* interests? Are you an apiarist? You'll find bees there. Numismatics? Same thing for coins and notes. Want to plan a holiday? Yep, not only is all the info there, but you can book the seats as well! Want to buy a house, a car? You can do it over the 'Net. Don't be put off by the technology. You really don't have to understand all of it to simply use it and benefit from it.

You don't even have to be particularly computer-literate either. The way recent software is going has seen the once-fearsome gadgets develop a new-found user-friendliness. I think we've readily established over the past few years just how useful a computer can be in the radio shack, and there's now so much radio-related information available, both on the 'net and elsewhere, that it's almost a mandatory item for the shack.

Look at our feature review on Page 7. Here we have a new Icom receiver which is totally useless without a computer. It simply won't do a thing without one to provide the clever user interface.

We've also run a couple of opinion pieces this month too, both of which effectively look at the same problem: what is happening to hobby radio, and why. Is the computer the bad influence which is taking people away from our hobby? Can there be ways to smoothly integrate the two? Can we roll with the punches, reacting strongly in a thoughtful manner? Only time can tell...



Meanwhile, the picture this month is of a new hand-held CB transceiver. So what, you say? Well, this one is different. Very different. It provides the usual 40 channels of AM — and does the lot in SSB too! It's small, and it won't be cheap, but we're looking forward to telling you more about it soon. Keep watching these pages.

Our next issue, cover-dated January, will be on sale on Christmas Eve. If we happen to miss you before Christmas — perhaps you'll already be on holidays, or maybe you live in a remote area — we trust that you and yours have a safe and very happy Christmas and New Year break, and we look forward to your joining us once again as we roar towards the next century.

73 and warm regards until then.

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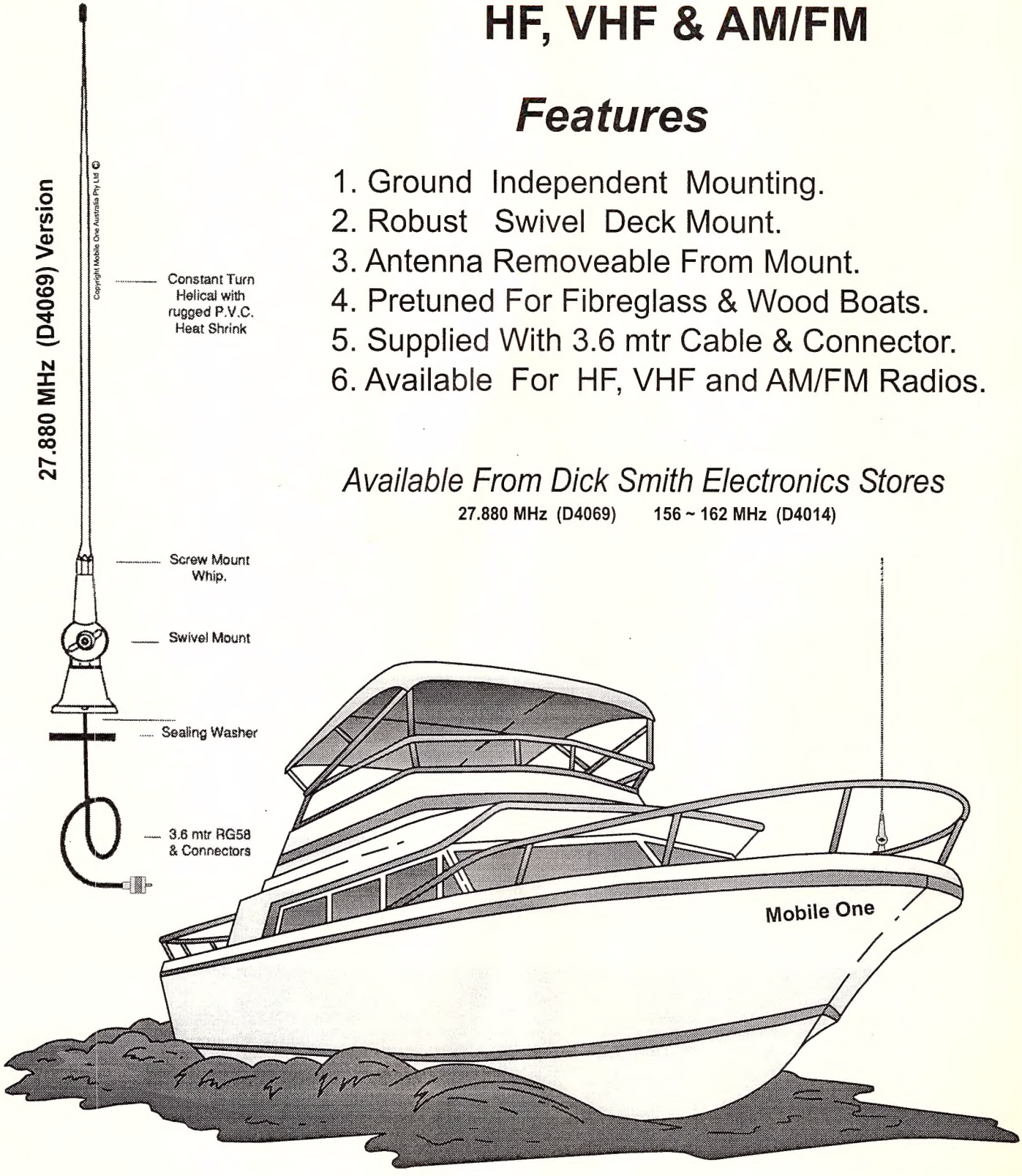
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Icom IC-PCR1000

A new communications receiver... with a difference

By Ken Reynolds

Icom's new IC-PCR1000 wide-band communications receiver is a demonstration of the company's ingenuity at combining state-of-the-art analogue and digital electronics into a feature-packed instrument that has a lot more to offer than the usual $1000 scanner. While it is not the ultimate or the definitive radio communications package, it goes very close to filling the bill for a full-featured, high-performance receiver that will satisfy a wide range of users.

The black box

Unimpressive is one's first impression of the compact, flattish black box measuring only 127mm wide by 199mm long and 30mm thick and weighing in at 1kg without attachments. It is only when the software is installed and running that one gains a real perception of the full capabilities offered by the package.

At one end lies the power on/off switch for the IC-PCR1000 12 volt DC low voltage supply and an associated green LED to indicate activity. The other end of the box holds a row of five connectors and an earthing point screw terminal. The connectors are: BNC antenna receptacle, a DB9 9-pin RS-232 level serial interface connector, the coaxial DC power socket, an external speaker jack — even a jack for a TNC packet interface.

Internally, there is not much to see except for a neat array of SMDs and a few filters skilfully blended to produce a sophisticated electronic result. There is, however, a tiny slide switch for the user to select between speaker output level and headphone level directed to the 3.5mm audio output socket.

The IC-PCR1000 is a serious communications receiver sporting triple conversion superheterodyne circuitry with the first IF (Intermediate Frequency) at 266.7MHz, plus the traditional 10.7MHz and 450kHz, the last of which is bypassed for WFM reception.

The unit is also supplied with a suitable mains DC power adaptor, a logic serial port interface cable, and a portable, telescopic antenna with a few metres of coaxial cable attached.

Software installation

The black-box management software is supplied on a pair of high density 1.4 MB floppy disks which should be handled in the usual manner... you know the routine — make copies and store away the originals for safe keeping.

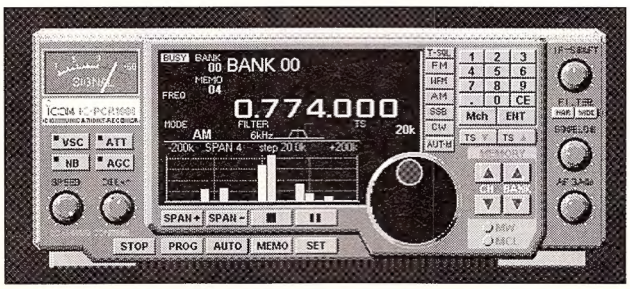
System requirements are a 1.4M floppy disk drive, and a minimum of 486 processor, 16 MB of RAM, 10 MB of free hard disk space and a 640 by 480 pixel display.

The program is intended to run in a MS Windows 3.1 or Windows 95 environment and installation is simplicity itself via the familiar SETUP screens and by answering the prompts as they appear. The only catch I can see is for new PC users not yet accustomed to computer serial COM ports, their quantity and allocation. For a basic two-port system the mouse will probably occupy COM 1 with COM 2 free for the IC-PCR1000 interface. You are required to nominate a port during SETUP and the installation program will let you know if it finds the Icom black box hardware.

For comparison, I installed the IC-PCR1000 software on two different PCs — a 486DX 33MHz and a Pentium 133MHz. Installation of the software went to plan on both machines, however, there is a quite noticeable difference in the two screen displays. The 486 machine had a reduced size graphics display for each of the available radio fascias compared with the Pentium display which was larger and more detailed. Operation of the receiver was also slowish on the 486 against the sparkling screen activity of the faster machine. Pretty much the expected result, however, the 486 machine running Windows 3.11 still produced an acceptable operating speed.

The secret to keeping the operating speed up to scratch is to shut down any other programs you might have operating in the background. With the Pentium the speed limitations are not nearly so noticeable. If you decide to use the modular *rack mount* display however, it is also wise to minimise the number of modules operating at one time. For example, the bandscope feature drives the CPU into number crunching overdrive if the widest span is selected while the frequency step increments are calling for high resolution on the screen. When the band is busy with many adjacent frequencies displayed on the scope the 486 machine was reduced to a crawl, in some instances, in the frequency tuning department. But, once identified, the problem can be easily improved by reducing the load on the CPU.

One of the great concept features of the PCR1000 is its adaptability. Because it is not a plug-in hardware module — like the **WiNRADiO** product reviewed by Chris Edmondson, VK3CE, in the May 1996 issue — it is able to operate from just about any PC, including a laptop, providing the machine meets the basic hardware requirements. You will require a separate 13.8 volt (approx) DC supply for the receiver package, however, the power requirements are quite modest and IC-PCR1000 operating at full tilt requires only about 0.5 amps or so from a low voltage regulated DC supply.

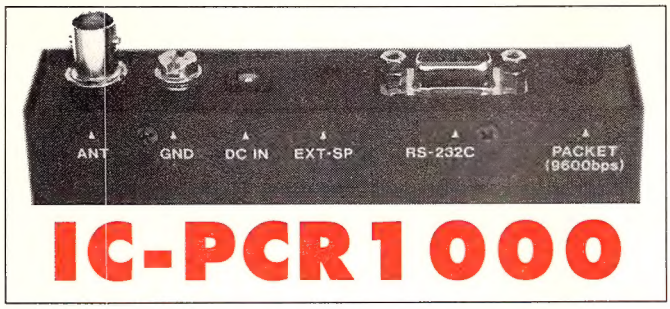


Getting on air

With the computer connections made and the software launched, the mind literally boggles at the full range of real communications receiver features that are spread out across the screen.

Features on the **Tuning Screen** are: Frequency readout and main dial with a tuning step indicator that ranges, in all the useful steps, from 1Hz to 10MHz

....☞



including 12.5kHz and 30kHz steps. A simulated numeric keypad for direct frequency entry and Memory Channel selection via the Mch button and MW (Memory Write) button that transfers displayed frequency to the selected memory allocation. The MCL button is used to clear unwanted memory information. The BANK button is used to change the displayed memory bank number and name if it has any, and MEMO displays the memory channel and name.

The **METER/SCAN** module has a heap of switchable and advisory features including a simulated analogue style signal strength meter and centre frequency indicator. All the SCANning functions are controlled from this panel. These include: Scan speed and hold delay with an AUTO button that starts and stops the automatic store to memory feature. A SET button hides and reveals a dialogue box containing links to a range of preset functions for scan functions, band scope, programmed scans and auto mode information. The VSC (Voice Scan Control) detects if the displayed signal carries modulation or not. Memory storage is virtually unlimited and there is room provided to enter customised details about each stored frequency.

The MODE/VOLume control module, like the others, is intuitive and carries slide controls for AF gain and squelch along with a MONI button that opens the audio squelch to monitor otherwise concealed signals and a MUTE button that essentially does the opposite. A group of four square buttons individually toggle on and off the AFC (Automatic Frequency Control), Noise Blanker, AGC (Automatic Gain Control) and a signal attenuator functions. Modes are selectable through USB, LSB, CW, AM, FM and WFM with a choice of user-selectable filter bandwidths ranging from 3kHz up to 230kHz for the wide FM mode.

Filter width is selected via the WIDE and NARrow controls. A blue filter width icon indicates relative filter width with the actual numeric bandwidth is displayed along side the icon. The tuneable IF shift function is available for SSB and CW modes and is also displayed with an animated icon portraying filter window position relative to the tuned centre frequency. A reset button restores equilibrium when IF shift is no longer required.

Adjacent to the FM button is a smaller and innocuous looking button labelled '**T**'.

Here is the first real trap for new players. This is the sub-audible tone squelch button otherwise known as the CTCSS function. If this function is enabled — which it appears to be by default — the only signals you will ever hear from your new IC-PCR1000 on FM will be those carrying the nominated sub-audible background tone of which there are a few dozen ranging between 67.0Hz and 254.1Hz. So if you don't hear any activity whatever the squelch setting you may need to select 'T' and set the tone function to off.

The **BANDSCOPE** is very handy and also the source of a second major trap for new players. The scope SPAN or bandwidth is user programmable in four steps from ±200kHz down to ±25kHz with the resolution across that bandwidth controlled largely by the selected dial tuning steps. The scope feature also has START / STOP buttons to enable the sweep to be turned on or off. Again, pretty harmless in appearance but deadly in operation if you are trying to resolve CW or SSB signals. Why, you ask?

It seems that, while the scope sweep function is activated, one can tune all the receiving modes very nicely... except CW and SSB. Hmmm. However, when one cancels the sweep function or turns off the SCOPE module SSB and CW burst back into life.

This was a very satisfying discovery, but if you don't know the trick it can also be the source of considerable frustration. There may be some mention of it in the HELP menus but I could find no reference to these little peculiarities in the accompanying (minimal) owner's manual.

Last but not least is a DTMF code reader decoder that can be set up perform a number of PC-driven functions on reception of a specific DTMF number. The receiver can be set to respond to a DTMF code of up to 20 digits... maybe even more, but I gave up at 20 numbers.

The other implications of this feature are too insidious to go into here, but it is sufficient to warn against doing your banking by cordless phone or analogue cellular phone either for that matter. It could be very costly when you are asked to enter account and PIN numbers through the DTMF keypad!

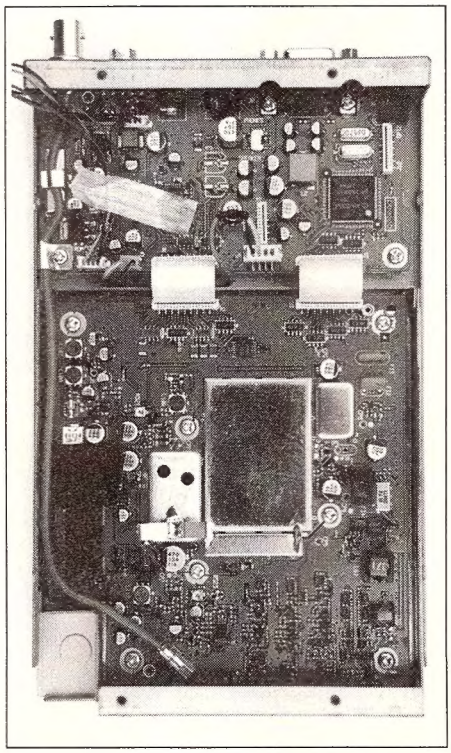
Having briefly whipped through the maze of features, your next decision will be which screen to use for your new point-and-click mouse-driven communications receiver. The modular display described above (see this issue's front cover) permits the greatest number of user-programmable options and offers the most graphic screen displays, however, other choices are available from the Tool Bar Menu or from the familiar PC pull-down menu boxes. The whole range includes:

'Radio Screen'
'Component Screen'
'Communications Receiver Screen'
'Individual Receiver Components'

The available features are illustrated in these pages.

Performance

Overall receiver sensitivity on the test bench proved to be quite good but not blistering; however, parts of the popular VHF & UHF spectrum between 50MHz and 700MHz produced narrow FM sensitivities of around 0.3 µV (microvolts) for 12dB SINAD and ranged to a worst case of around 0.5µV at 37MHz and 0.38µV at 1130MHz. AM and SSB performance in the HF band is typical of most general coverage HF receivers and ranged from a best case of 0.25µV on SSB using the narrowest filter to about 1.7µV on AM also with the narrow filter. Performance below 2MHz was not evaluated on the bench.



On a proper antenna the IC-PCR1000 comes alive and, although its on-screen operation is in many ways similar to WiNRADiO the ultimate result of the Icom seems quite superior.

The small telescopic antenna supplied with the IC-PCR1000 is only a stopgap measure, and the operator's manual points out that to produce the expected performance an appropriate, impedance-matched antenna will be required.

To evaluate the relative on-air performance I used an Icom AH-7000 discone antenna for VHF and UHF and several wire antennas for operation below about 30MHz. Good performance was had on HF using an old-fashioned random long wire antenna and antenna tuner to peak up the performance. With the antenna tuner in line I noticed some new PC-based interference

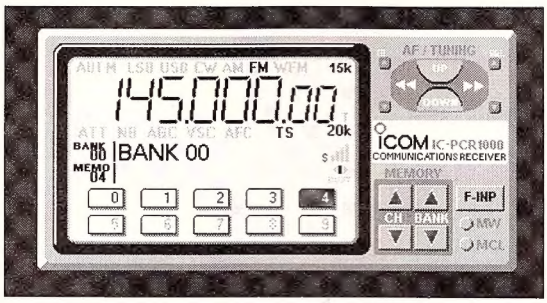
creep into the band and had to fiddle the earthing arrangement a little to resolve the problem.

As suggested in the handbook, it is important to attach a good earth to the case ground terminal in keeping with good HF radio practice... and it does make a difference to performance and the IC-PCR1000's ability to pass stray interference voltages to the big *sink* we stand on.

As one would expect, noise pollution from the host computer can be a major problem and, like television line oscillator hash and harmonics, it is not possible to eliminate the problem completely except for the use of a really remote antenna — especially on HF. My discone antenna is at least 15 metres away from the PC on a shade over 26 metres of Belden 9913 coax, yet it was still possible to tune odds and sods of gunk from the PC. I still have exactly the same problem using my trusty old IC-751A because, if you haven't noticed, PCs are here to stay. The bloke next door is a draughtsman who works from home, and his computer burns up the band night and day anyway. However, for not much more money I get much better performance with the IC-PCR1000 than I ever achieved with the *other* PC wide-band receiver package... and that's a big relief.

There is also no denying the IC-PCR1000 is not as good in the performance stakes as the up-market Icom communications receivers like the IC-R8500 (which costs over $3000) or the IC-R9000 (at $12,000 plus) but considering its staggering array of features, price and size it turns in great performance as far as sensitivity is concerned.

The IC-PCR1000 is certainly not free of image problems and the severity of the problem will depend largely on where the receiver is physically located in relation to saturation strength signals that have the potential to really cause havoc.

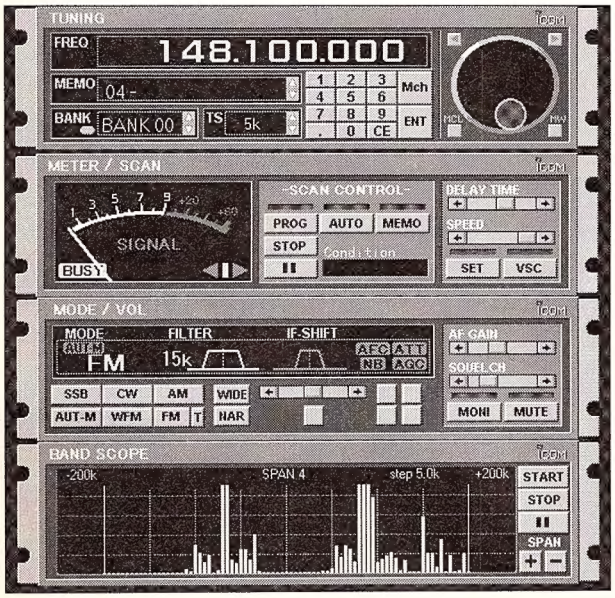


Scanning

When used as a *scanner* the IC-PCR1000 delivers pretty good results but the odd images may still be unacceptable to some critical listeners. Overall, though, I found in general the performance was excellent throughout the majority of the popular VHF/UHF allocations. I noticed quite a bit of image interference in and around the two metre amateur band but this is a product of where I live in relation to a selection of quite high-power pager transmitters, and I tend to suffer the problem with my IC-R7000, IC-R7100 and two metre transceiver as well.

The IC-PCR1000 offers an 'unlimited' number of memory allocations stored in banks of 50 channels each, and these are limited only by the amount of hard disk space available — or the number of floppies you have on hand. If you are not sure of the appropriate mode and frequency step for a selected frequency the 'A' for automatic mode will do the work for you, even selecting the filter bandwidth deemed by the software to be most suitable. The user can then override any or all of the nominated functions if desired.

The digital AFC (Automatic Frequency Control) function automatically tracks the received signal centre frequency — even with the 3kHz and 6kHz filters — to assure maximum stability. This feature is particularly useful for frequencies above 1GHz where drift is not unheard of.



To tune the main frequency dial, the mouse cursor is placed within the large simulated circular tuning knob and the right or left hand mouse button (to increment or decrement the frequency) is clicked to initiate frequency tuning corresponding to the displayed frequency steps. The tuning steps are quickly altered by clicking on adjacent arrow buttons.

Mode and most other functions are selected in a simple intuitive manner by clicking on the expected screen displayed buttons.

There is quite a lot of AF gain available from the PCR's tiny internal loudspeaker, but much better results are to be had with an external speaker.

For listeners new to this switchable filter style of receiver, it pays to keep a check on the displayed filter bandwidth — starting with the narrowest first and experiment with the wider apertures to suit the occasion. All the IF filter widths are included in the package so there are no hidden extras to buy.

This receiver also offers the opportunity for listeners to appreciate the excellent audio quality broadcast at around 1MHz or so by the old AM band radio stations. Contrary to popular belief, AM radio stations sound *great* when passed through the larger window on a wider IF filter. However, due to bandwidth limitations on AM broadcasting the stations are not quite as crisp and interference-free as the WFM band signals... but they get pretty close.

Summary

The Icom IC-PCR1000 is a clever, do almost anything receiver for use with a suitable personal computer. It offers all-mode, uninterrupted frequency coverage from 10kHz to 1.3GHz with a range of features usually reserved for top-of-the-range equipment.

The package contains a number of receivers rolled into one compact box about the size of an AM-only CB radio — and it looks like pretty good value for a RRP of only $950.

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ONE MAN'S OPINION

Amateur Radio... a time for change?

By Jack D Haden, VK2GJH

Like many other radio amateurs I was most interested to read a letter published in the October edition of Feedback. It was penned by Don Hodkinson, VK7LDH, and gave his views on the full call amateur examination requirements. Don had some very constructive views on the subject and the big question was: will these changes ever come about? Will opposition to change be strong? Will a vocal minority (on both sides of the argument) eventually win and changes be implemented or perhaps denied?

I often ask myself what is wrong with amateur radio today. There's been little change to the amateur radio examination curriculum over the years but the technology of our equipment has become frightfully complicated, virtually eliminating the basic maintenance we once enjoyed with old valve transceivers. Is the technical requirement in the theory papers outdated these days? How much of that theory we learn to pass the exam do we actually put in practice after we have our ticket? Very little, in fact...

Like the AM mode, CW is dying a slow death, and we must accept that it too will eventually fade into the sunset. With CW rapidly vanishing from commercial HF radio, there will be little future argument for its retention as an HF amateur radio requirement. Just wait and see, as time will tell.

Youth and amateur radio...

When something goes wrong in society our youth are often blamed, but declining amateur radio populations in VK-land is often blamed on young people failing to take up the hobby. "...The kids of today are too lazy to study for the ticket and want everything for nothing, just like they had on CB radio...", moan many amateurs. As in the VK7LDH argument, a lot of young kids and adults are put off amateur radio by our technical requirements, especially for the full call, and question why such a wealth of information must be learned just to talk on a radio. The majority of them just want the ticket to chase DX and mainly on SSB or the digital modes.

Are our youth put off the hobby by the cumbersome technical requirements and CW? Is it time to move with technological change and review our entire amateur radio examination requirement? Are we going to populate with the entry of young blood or perish as more silent keys diminish current numbers? CB was the last blessing that boosted amateur radio back in the late 1970s and into the '80s, with the population stimulated by CBers making the transition to amateur radio. On the other side of the argument, a lot of young people were a part of that scene; they passed the licence requirements back then, so what's wrong with passing the same requirements today?

There is a problem with our hobby in attracting young people. I make no bones about that, why is it when a very young person passes a full call ticket they get instant publicity in radio magazines, often with their face on the cover? The answer is simple — it's a rare event and nothing more.

Jim Smith, VK9NS, mentioned in his October DX column that a 12 year-old girl in the UK had passed her full call ticket, complete with the 12 wpm CW test. Great stuff, but is she a one-off experience? Maybe she's one of the gifted children we often hear about. If there were so many young people already getting into amateur radio her success would go unmentioned.

Then again, why are there so many young people on amateur radio in Japan? Maybe their examination requirements are not as stringent as ours, or possibly Japanese youth are more motivated and willing to study hard to reach their goals. The Japanese amateur ranks are growing so rapidly they are continually running out of callsign blocks to meet the demand. So what's the key to their success in keeping the hobby alive?

Can we blame the young for pursuing computers and the internet, video and electronic games, cable TV and virtual reality arcade games? Do we attack this just because they are high profile targets and that we are too stubborn to change our hobby in tune with today's changing technology? Are we as amateurs afraid of showing off our hobby to today's youth? JOTA (Jamboree of the Air) always struggles to recruit sufficient amateurs to establish JOTA stations each year as more and more amateurs cannot be bothered with events like this.

Who or what is to blame?

Do we blame ourselves as a reclusive society where newcomers are not welcomed with open arms? Do we blame the outdated licence requirements and CW for putting people off the hobby? Can we say people lack motivation in today's society and have the lost the will to sacrifice free time and other luxuries to study for something they really want?

I hear many grumble and say if people want an easy way into the hobby then do the Novice licence, and if you really think CW is the demon many make it out to be then do the Limited or Novice Limited licence. In reality is this really enough? Are the stepping stones to the full call licence outmoded or too restrictive or do they lack any real enticement? Why is the average age of a full call operator 40 years plus? Whose fault is it, and how do we change it — and when?

Let's look at the problem seriously. Stop blaming CW, lazy youth, the WIA or the cumbersome theory requirements, and look at ourselves more closely. Maybe it's time for a committee to be formed to confront our problems and make the necessary changes to take us into the year 2000 and beyond.

Make change, make the hobby attractive to newcomers both young and old, and at the same time keep the status quo with current amateurs. It will be a hard track to go down but it can be and should be done.

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Yaesu FT-8100R

They've got this new dual-bander right...

By Chris Edmondson, VK3CE

A couple of years ago I waxed lyrical about Yaesu's all-new FT-8500. A remote-control dual-band amateur transceiver, it had loads of features and receive performance over a generous amount of spectrum. It also had a somewhat clumsy user-interface. And that's being kind to it. The great performance was let down by the hard-to-use switchgear.

Somewhat stung by user and media reaction to the otherwise promising rig, Yaesu quickly made amends by releasing the FT-8000R, which added conventional knobs and front panel buttons to the FT-8500's proven insides. While it had tweaked the package (it had increased the receive frequency range by an incredible amount — more than 600 MHz *extra*!) a couple of the FT-8500's features were missing, notable among them being the removable front panel for remote-control operation and the alphanumeric display, which meant no more named memories or the versatile spectrum scope function.

To put this all in perspective, our review of the FT-8500 appeared in August 1996, while the FT-8000R was reviewed just half a year later in February 1997. This time it's not far shy of a year later, and we have yet another new Yaesu dual-band radio. This time it's something of a mix of the FT-8000R and FT-8500. In fact, with the best features of both in the one box, it has replaced *both* of them in the lineup.

So let's take a close look to see what this newcomer is all about...

The lie of the land...

Have you seen a Yaesu FT-8000R before? Good — for all intents and purposes you've seen an FT-8100R as well. Externally, the two radios are like two peas in a pod, save that the FT-8100R has borrowed the remote-control system from the FT-8500. Oh, and the SO239 antenna connector has finally been ditched in favour of a far more efficient N-type connector, still conveniently placed on a flying lead.

The front panel has 12 small buttons, each of which — save one — has a small pinprick of light shining through. The SCH button is completely translucent. SCH is sort of a glorified scan button, but it also controls an RF squelch function (where the rig remains firmly muted below a set S-meter reading), and offers a 'smart search' function for single or continuous band sweeps.

As you'd expect, the liquid crystal display dominates proceedings, taking the bulk of front panel space. It is softly and evenly backlit by what Yaesu calls OmniGlow. The lighting is quite orange in hue, and doesn't blind the driver at night. It's variable in several steps and can be completely turned off. Backlighting aside, the LCD is also very clear to read from just below the horizontal to virtually vertical, and, laterally, remains clear through a full 180°. It's not perfect, but it's a far cry from some earlier displays, which were all but invisible in certain situations.

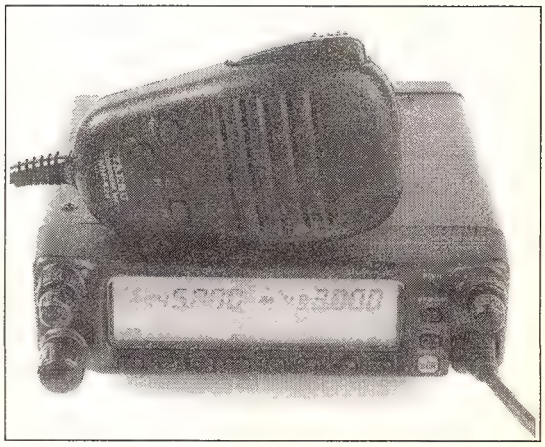
The multi-mode tuning knob is at the lower left, with volume and squelch for the 'left band' (usually VHF) directly above. Volume and squelch controls for the 'right band' (usually UHF) are directly opposite on the far right, with the microphone's eight-pin modular connector below that. In between these are the display and, as we've said, the 12 buttons. I say 'usually' because you can also receive VHF signals on the UHF side and vice versa — or two of each at one time.

The supplied microphone has six buttons and two switches, and is very simple to use. You can change bands, switch from VFO to memory, or use your choice of functions via two programmable buttons.

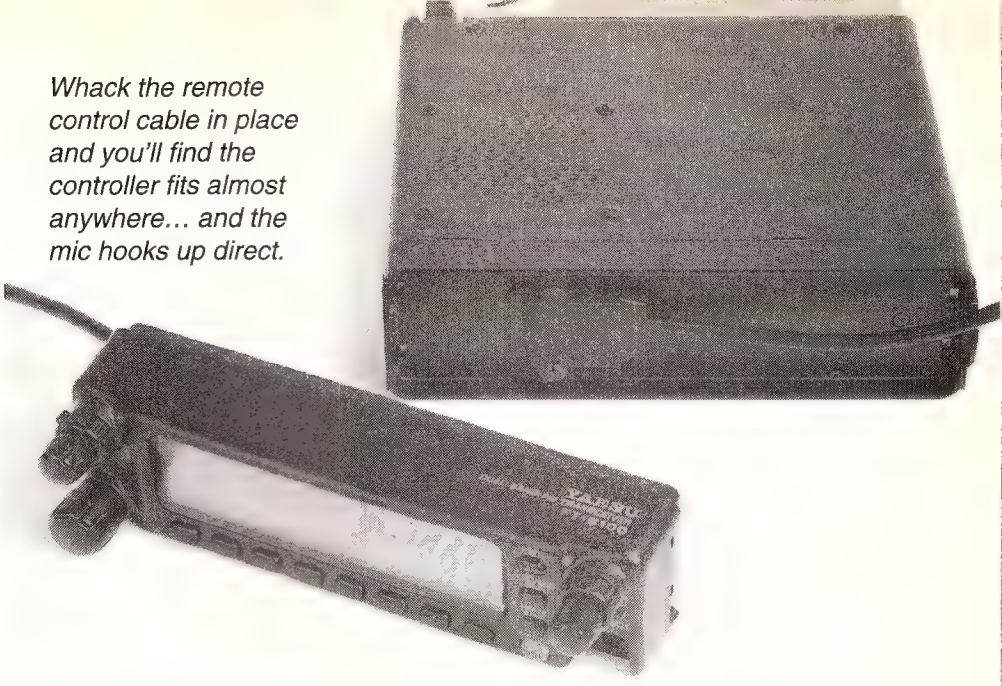
The control head can be removed from the transceiver by pulling on a little tab on the right hand side. An optional cable kit, the YSK-8100 ($99.50), can then be inserted between the front panel and the radio for effective remote control operation. The data cable carries everything save receive audio, and the remote kit includes a long external speaker lead for that purpose. The microphone attaches to the remote section, so you don't need an extra cable for that, as you do with many remote installations (including the FT-8500).

The YSK-8100R also includes a backing/mounting plate for the remote section (you still use the supplied mounting bracket for the rest of the radio), and you can attach this direct to the dashboard or choose from quite a range of optional bits and pieces which should see the radio installed on just about any solid surface. These include quick-release brackets, a multi-angle head, and so on.

While we're on the subject of options, there's quite an



*At **left**, the FT-8500. Note its single front panel button. You do absolutely everything from the microphone, including adjusting volume and squelch. On the **right** is the Yaesu FT-8000R, which overcomes that problem but cannot be remote-controlled.*



Whack the remote control cable in place and you'll find the controller fits almost anywhere... and the mic hooks up direct.

array of them. You may want to get the FTS-22 CTCSS decoder if you spend a lot of time prowling around the commercial spectrum or use amateur repeaters equipped with this useful feature. While it costs $126, it provides decoding for both bands at once if you want, and both its settings and on/off state are recorded in memory.

A few other things are worthy of particular note. Scanning, either through stored memory channels or in the VFOs, is lightning fast, and will stop on even the weakest of signals.

Increasing the number of memory channels to 210 (100 per band plus special scan channels and the HOME (call) channel) is a good move. In traditional Yaesu form, you can freely tune from any of the memories, without having to move the channel to VFO. Each memory records the frequency, offset information (with odd rx/tx splits if you want), output power setting, CTCSS settings and packet radio state (1200 or 9600 baud setting).

At power up time, the display shows the supply voltage for a moment before returning to its previous state. In an unusual but useful twist, if you were scanning when you powered down, you still are when you switch on again.

Inside, the radio is particularly neat. Most of the receiver section is on one board, with most of the transmitter section on the other, directly opposite it. A smaller sub-board drives the 'smarts' needed to talk to the front panel. Extensive use is made of surface-mount componentry, but even so it is possible to follow the circuit around most of it. As an aside, a full schematic is supplied. I point this out because one of the Big Three has stopped supplying circuits with its radios...

On the air...

I switched straight from an FT-8000R to the FT-8100R, then conducted the review with the two sitting side by side. The feeling of *de ja vu* was so strong that I initially thought I was using the same radio — until I hooked up the antenna for the first on-air test. The so-so audio reports from the FT-8000R gave way to some very approving noises for the FT-8100R. Those who know my voice told me the radio was doing an excellent job indeed. However, I noticed a few small operational changes here and there, and I liked all of them.

On receive, I must admit that the FT-8000R simply didn't have enough receive audio grunt to get by with its internal speaker in my noisy little Subaru WRX, even when wringing the neck of the poor thing by cranking the audio pot up to maximum. I *had* to have an external speaker in line to get anywhere. Unless I miss my mark, Yaesu has made amends with the FT-8100R. The audio is noticeably stronger. The funny thing is that the rated audio output is exactly the same, with 2W into an 8Ω speaker. It somehow *sounds* louder, though. Mind you, that external speaker still helps in the car...

I also tried the usual receiver torture test, driving to known pocket pager trouble spots and major city UHF sites, and the new radio was clearly better behaved than its predecessor. Even with a substantial external antenna (a Brainer ST-7800 if you know it...), and driving through the worst imaginable stuff, the FT-8100R generally kept its cool. Operation within the amateur bands was especially good, but I noticed that there were a few foreign squeaks and noises on the commercial UHF sector and just above two metres — but that came as no surprise! It is, however, marginally better in this regard than both the FT-8000R and FT-8500 — and substantially better than many other radios.

Overall, the receiver performance of these recent Yaesu dual-banders really has been especially good, particularly when compared to some opposition or older units, and this one seems even better again. Add to that its quite remarkable scanner-like frequency coverage and you really do have a stove-hot piece of gear.

On receive, you can tune from 110 to 550 and 750 to 1330MHz, not including the analogue cellular telephone frequencies. This really is an astounding frequency range for a two-band transceiver. There are *scanners* which don't have as good a coverage as that... However, as with the FT-8000R, this radio is really pretty deaf up high — and is *profoundly* deaf by the time it gets to the 23cm repeater and simplex channels! However, its claimed sensitivity is 0.16μV at 2M and 0.18μV at 70cm — again, better than its predecessors and a worthy improvement given its good selectivity.

The AM receive mode can be switched in at will, but it obviously sees most use on the aircraft band, where it performs well. I did note, however, that weak mobile signals are often accompanied by engine noises... I noted earlier that Yaesu has fitted the FT-8100R with a single N-type antenna connector. This is a superior connector, particularly when used at higher frequencies.

....☞

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Photo: GQ Patrol/Maverick

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Photo: 70 Series Landcruiser Troopcarrier-tray back-MWB-SWB-Bundera

Photo shows longest pod. Two shorter versions also available for the 70 Series.

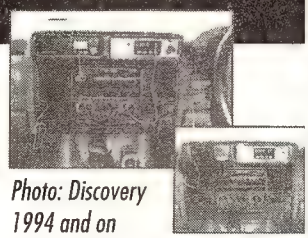

Photo: Discovery 1994 and on

Easy installation - if removed, no visible signs that pod has been fitted.

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A comparison — and what the FT-8100R does not have...

We thought we might delve back through the reviews of the FT-8500 and FT-8000R to see how one stacked up against the other and this newcomer.

For starters, you can't directly program frequencies from the FT-8100R's microphone. That's no surprise — the supplied MH-42B6J microphone doesn't actually have a numeric keypad. On some overseas markets, though, the FT-8100R gets an MH-36B6J, which has a DTMF keypad built-in. Strangely, though, even if you buy the optional DTMF keypad, it seems you *still* cannot use it to directly key frequencies in. The reason it's strange is that you *could* directly key in on the FT-8500 — and this radio looks exactly the same inside... Oh well. Put it down to programming.

As well, the FT-8500 had a versatile 'spectra scope' function, which allowed you to physically 'see' activity either side of your chosen channel, but this was quietly dropped when the FT-8000R hit the market. It hasn't come back with the FT-8100R either, simply because neither of the other radios get the FT-8500's alphanumeric screen. (Mind you, I have yet to meet anyone who actually *uses* the feature on a regular basis, so maybe it's no loss...)

The return to a 'normal' screen also means you cannot tag the memory channels with names, or send those silly little text messages to other stations. A shame for the former; so what for the latter.

Since we first met the FT-8500 and, later, the FT-8000R, I've spoken to a lot of owners of these radios, and they wanted to know a few specific things about the newcomer. I expect almost *all* my answers to their questions will bring smiles.

To start with, the ergonomics of the FT-8000R were absolutely excellent and, as this radio looks identical, it also earns good points for the user interface. But while this department overcame many of the FT-8500's criticisms, some users complained that it had a few other flaws.

Chief amongst these was a rather narrow transmitted audio bandwidth. There's nothing wrong with it, mind, but some other radios make it sound a bit flat. Yaesu has completely fixed this with the FT-8100R. It sounds terrific — smooth but very crisp and punchy.

This is a particular accomplishment when you consider that, in this radio, your audio is actually converted to a digital signal in the control head, passed via connectors or an extension cable to the main body of the transceiver, then converted back to an analogue stream for transmission. (As an aside, *all* data between the transceiver and its remote controller is sent in a digital form. It runs at a pretty snappy 38.4kbps rate.)

Another FT-8000R grizzle was the relatively low receiver audio output. It was fine in the shack, but needed more in the car. This has been addressed by improving the top-end response, and the receiver actually sounds a degree or two brighter as a result. Hook up an external speaker and they'll hear you in the next suburb.

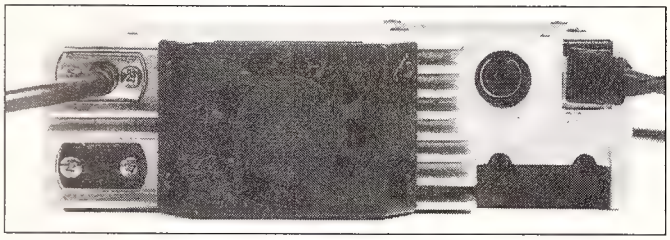
I'd also heard some strange reports of unwanted tones manifesting themselves and so on — not that I ever heard them in several months of happy on-air use — but there's simply no trace of anything like that with the newcomer.

Some stations also had problems getting their radios to work at 9600 baud packet, but the three family members I've reviewed have all acquitted themselves very well indeed with no modification required at all. Simply plug the TNC in the special data connector on the rear panel and you're away. And isn't it wonderful that the major manufacturers (Icom, Kenwood and Yaesu — the so-called Big Three) have all agreed on the pin-outs for these mini-DIN connectors, as well as a common power connector. Well done!

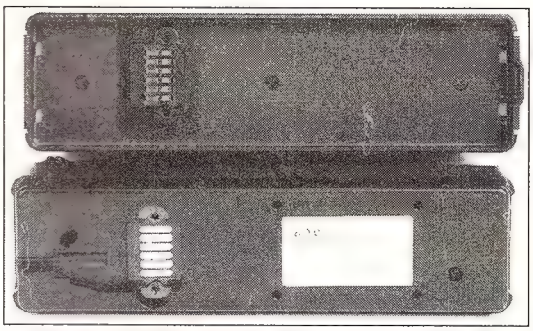
The on-air performance gets an enthusiastic thumbs-up, then, with the radio filling its intended role very well. It loses two points for still not having enough received audio grunt, but gets them back by putting all other dual-banders to shame with that unbelievable frequency coverage. Add a bonus point for having *really* nice transmitted audio, and you have a product the users will love.

Summary

Overall, then, a clean bill of health for a nicely-executed piece of gear. It's easy to use, has lots of memories and plenty of functions. Unlike the FT-8500, it's really easy to use, and with major frequency steps as high as 10MHz, doesn't really miss out by not having direct keyboard frequency entry.



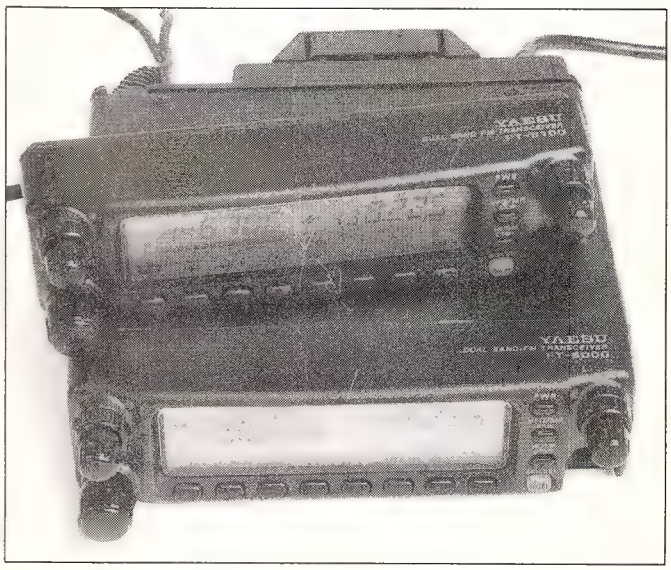
Add in the excellent ADMS computer programming package, and you have a winning combination you'd be really hard-pressed to beat.



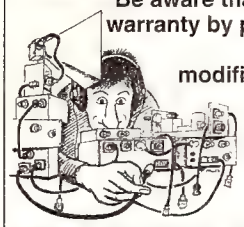
And let's face facts. This gadget is virtually a scanner which can transmit, such is its performance over a huge chunk of spectrum. With that in mind, was the FT-8000's 55 channels per band enough? No. But the FT-8100R's 210 channels pay fair recognition to the possibility that you'll want to roam a bit with this lovely radio, and simply put the frosting on the cake.

You can expect to see FT-8100Rs in Dick Smith Electronics stores during this month, December. The recommended retail price will be $899. I'd be inclined to pop down and reserve one now. I have a funny feeling they will sell well, and fast.

Radio and Communications thanks **Dick Smith Electronics** for the loan of the review transceiver.



MODIFICATIONS



Be aware that you may void a warranty by performing any of the following modifications. R&C has not tested them and makes no warranty as to their serviceability.

Mods, Fixes and Updates

By Greg Towells, VK2GJT

Improving audio in the PRO-2005/PRO-2006 scanners

The Realistic PRO-2005/PRO-2006 scanners are considered by listeners to be one of the finest scanning receivers available. These units cover 25-1300 MHz in AM, narrow-FM, and wide-FM modes with only a single break in coverage from 520-760 MHz.

There is, however, one major fault with these receivers: The audio fidelity is very poor. The designers did a great job in the RF sections of the receiver, but must have slept through the audio design!

Scanners are not supposed to be hi-fi receivers, however their audio performance should at least be as good as a common amateur transceiver. Compare the audio of the PRO-2006 with that of an Icom IC-735 transceiver. Even when the PRO-2006 is connected to a good quality external speaker, the audio is miserable by comparison. *(Frankly, Greg, I think that's an unfair comparison. Look at the price, for starters! The IC-735 had a triple-conversion receiver with a very good internal speaker. Hook it to a quality external job and it sounded terrific! Ed.)*

To be able to listen to a scanner for long periods in comfort requires good quality audio. The reason for the PRO-2005/PRO-2006's sad audio?? Several coupling and bypass capacitors in the audio section have been mis-calculated by the designers.

Making the component changes suggested below will dramatically increase the audio quality of the PRO-2005 and PRO-2006 scanners. By the way, these two units are virtually identical. The main difference is that the LCD backlight cannot be dimmed on the PRO-2006. It can only be turned ON or OFF.

Be aware that alterations to your scanner might void any warranty left and, if not carefully done, can be hazardous to its health. Any work on these units should be done at a static-free workstation, if possible.

All the suggested changes are on the left-rear corner of the LINEAR circuit board, which is located on top of the scanner. These changes can be made without removing the board, but it is much easier to remove it. Be careful when re-installing the board. There is a hidden connector on the bottom of the LINEAR board that must be lined up with the PLL board underneath.

The following changes will improve the speaker and headphone audio. If you're using an external speaker, you'll be very pleasantly surprised by the results.

- Replace C226, a 100µF cap with a 1000µF.
- Replace C211, a 6.8 nF cap with a 0.1µF.
- Replace C206, a 47nF cap with a 0.47µF.
- Replace C207, a 56nF cap, with a 0.47µF

The above help improve the bass response.

Finally bypass C204, a 10nF cap, with a 4.7µF component. The original part is surface mounted on the PCB. Do not remove the original. The new C204 is soldered on top of IC5. Observe polarity. The positive end of the new C204 goes to pin 3 of IC5. The negative end goes to pin 11 of IC5.

Remove C208, which is a 4.7nF cap. This acts to correct faulty de-emphasis in W-FM mode. W-FM mode will sound a lot crisper after this change.

The following changes modify the buffer amplifier that drives the TAPE OUT jack. If you don't use this jack, these changes may be omitted. But if you do them, TAPE OUT quality will dramatically improve:

Replace C212, a 6.8nF cap, with a 1µF component. This helps improve the bass response. Observe correct polarity. The positive lead goes *away* from Q23 base lead. Q23 is surface mounted.

Replace C213, a 47nF cap, with a 4.7µF component. Again, this helps the bass response. For correct polarity, the positive lead goes towards Q23 collector.

Most of the changes noted above correct weak coupling between stages at low audio frequencies. Many of the original values produced audio that rolled off sharply below 1 kHz. Possibly the original designers were afraid of amplifying hum and wanted to mask it. The new values will provide fairly flat audio response down to 100 Hz, with no trace of hum or switching thumps.

In addition, PL tones (which are in the range of 50 to 250 Hz) now pass quite easily through the audio section, which will help those of us who are using PL decoders and displays with this unit. In particular, AM sounds much better with the improved low-end response — every beat-note produced by interfering signals in the 11 metre band is clearly audible!

Radio Shack created real winners with its PRO-2005 and PRO-2006 receivers. Carefully performed, these modifications will unleash their potential audio performance.

Happy listening!

PRO-2004 / PRO-2005 / PRO-2006 weather RX mod

If you are interested in reception of weather satellite imagery, here are a few hints on what you may need to do to your PRO-2004 / PRO-2005 / PRO-2006 scanner to get or improve your results.

Most people start using the narrow FM mode. The selectivity of the N-FM section of the receiver is primarily set by a 455 kHz ceramic IF filter that's connected to the N-FM discriminator chip between a couple of close or adjacent pins.

The selectivity of this filter is typically ±7.5 kHz or 15 kHz wide. At best, it is a compromise because it's too wide for 5kHz or 10kHz channels; about right for 12.5 kHz and 25 kHz channels, and much too narrow for 30 kHz/up channels like computer data including Wefax.

Baud rates of 9600-bps pretty much require an IF bandwidth of 20 kHz, minimum, with 50 kHz required for 14.4 kbps. Therefore, for WEFAX and com-

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TRADE CORNER WorldWideWeb:
http://www.tower.visionimage.com.au
AMATEUR ■ COMMERCIAL
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Tower Communications
Shop 3, 443 Albany Highway
Victoria Park, WA 6100
Telephone (08) 9470 1118
Facsimile (08) 9472 3795
email: tower@tower.visionimage.com.au

puter data reception, there is little choice but to modify the IF selectivity for those signals. You certainly can bypass the resident IF filter with a capacitor of a certain value, though the best option is to replace the stock IF filter with a wider one. Apparently wider IF filters are not all that easy to come by, so the capacitor bypass is an attractive option.

First find the IF filter and the NFM discriminator chip. In the PRO-2004 radio, it is CF2 at IC2, pins 3 and 5, in the PRO-2005 and PRO-2006 it is CF4 at IC2, pins 3 and 5.

Unless you can lay your hands on a 30 kHz replacement filter, the best option is soldering a pinline socket to each of the two NFM chip/filter pins, and then plug in a range of ceramic disk capacitors until you find one that works best. You can easily remove the capacitor with no ill effects to return to normal operation.

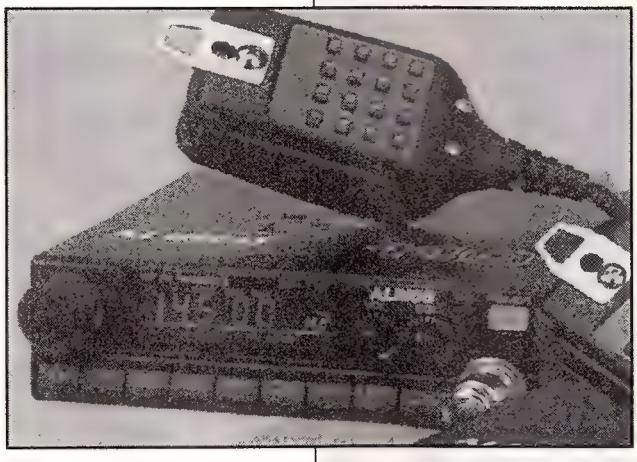
Values to try include 47pF, 100pF, 470pF, 0.001µF and 0.01µF.

The idea is to leak just enough of the desired signal around the IF filter. Too much, and adjacent channel interference will destroy your precious images. Too little, and you're back to the original problem.

Pinline sockets are highly recommended. You can break apart one pin from the strip and solder it to a pin of the IC, and it becomes just like a professional test point with no destructive effects. Leave it there permanently.

To solder the pinline socket to the IC pin, first remove all the plastic insulation from the pin so that it is bare metal. Insert a sewing needle into the female socket of the pinline (as a holder) and coat the male plug part of the pinline with solder. Then *carefully* (not too much heat for too long) pre-solder the pin of the IC.

Then place the pinline's male part up to the IC pin with the sewing needle still in the socket as a holder. Position it straight and perfectly against the IC pin, and touch-dab with the soldering pencil one last time. Remember, heat is the enemy of IC chips...



Most component leads will insert into a pinline socket just like a plug — good fit — but for those larger leads that won't fit, just solder the female ends of a pair of pinlines to the component's shortened and prepared (length) leads and plug the male ends into the female pinlines on the IC chip.

There is no danger to the chip for short contact periods and reasonable heat. Pinline sockets mean just *one* soldering job to the IC and then you're forever done, because a variety of things can be plugged in after that — and no more soldering!

Pinline sockets come in strips of up to 32 pins per strip. All are 'break apart' in that you break off or cut off however many you want. Experiment with the values mentioned previously and see what happens.

See you again next month! 73 until then...

Replacing Alinco DR-110 backlights...

There are Alinco DR-110s all over the place, and for good reason too. At the time, they were relatively inexpensive, yet dependable 2m transceivers. Generally, they appear basically bullet proof — except for one slight detail. The backlights are prone to failure, and once they go, the display is virtually unreadable. Like I said, a slight detail. If you are like me, and yours serves packet duty, then it stays on set frequencies and everything is fine. However if you need to know what frequency it is on, then something needs to be done.

Unless you know how, it is a rather frustrating procedure to replace these globes... so the following is how to do it. You need to be a bit confident with working with small circuitry to do this work. Before going any further, make sure you write down the contents of all your memory channels and so on. As a precautionary measure, you will reset the main CPU at the conclusion of this fix...

Remove the top and bottom covers. Remove three control knobs from the front of radio. Remove nut from shaft of the channel selector. Remove the nut from the microphone connector. Remove the front plate from radio. This has snaps on both top and bottom, *so be careful*!! Remove three small Philips screws that hold the PC board to the front of the radio. ***Do not cut wires***!!!

Locate the tabs that are holding the display to the PC board and bend straight. Be careful not to break them off! Remove display from PC board and set aside. This step can be eliminated if you can find the two lights that light up the display from the back of the PC board, which is not the easiest thing to do.

Locate the backlight globes. There are six of them. There is one under the off/on switch, and three above the row of small switches. These four have a blue rubber cover on them. There are also two lights mounted where the LCD display was.

Replace the light under the power switch, remembering to use the blue cover over the new light as well as the yellows sleeves on wires. You solder this light from the front.

Replace the three lights that are above the micro switches on the front of the PC board. These will have to be un-soldered from the back. Also replace the blue covers over the three lights.

Replace the two lights that stick through holes that go where the LCD display is, and again, make sure you replace the yellow sleeves. These lights solder from the back.

Re-install the LCD display and be sure there is no contamination of the contacts on the board and LCD display. Be sure to re-twist the tabs on the display that goes through the pc board. This display must provide a tight contact to the pc board or the display will not work, either with missing LCD segments or no segments at all. This LCD display shows the frequency, signal strength, channel number, and other functions, so you'd be pretty shot without it.

Test the display by powering up the radio. If you have any missing numbers, pull the LCD display and clean the contacts on the PC board and the display. I did by scraping the PC board with a screwdriver as well as the LCD display contact ribbon.

Assemble the radio and check the display at each major assembly point. Reset the CPU as shown in your owners manual. This is because that the CPU is located on the board you were working on and it may have some bad data after working on the rig. You may have to reset the CPU when you test the rig in order to show the full LCD display.

One handy hint whilst inside the radio. Once you get to the part where you have the LCD display off, carefully apply power to the radio. You will immediately see which display lights need replacing, as it is not apparent before opening the radio.

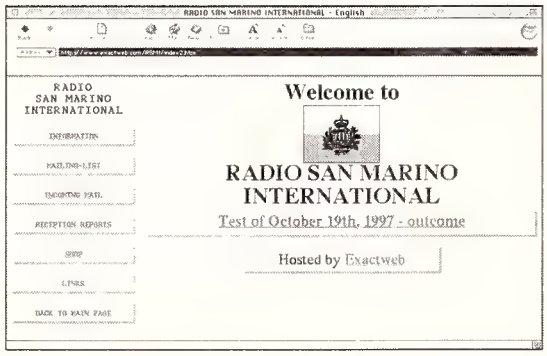
You can get replacement panel lights from your Alinco supplier, or alternatively a suitable replacement can be obtained from Tandy Electronics suppliers.

Baudwalking

A new shortwave broadcaster?

Last October a 'teaser' piece of e-mail was sent to a number of persons active in shortwave listening. "From Saturday, December 20, 1997 on SW dial from the Republic of San Marino, **Radio San Marino International** will take to the airwaves." Our inquiry brought a response:

"RSMI is an unofficial radio (San Marino is under Italian law) with [a] broadcasting site in San Marino Republic, very near to Mt. Titano. [It] Is an Italian / German / Sanmarinese join venture [sic], and the transmissions will be probably in Italian and German first. Our two frequencies on SW, will be on 49/41 metre bands and 25/22 metre bands."


RADIO SAN MARINO INTERNATIONAL - English
RADIO SAN MARINO INTERNATIONAL
Welcome to
RADIO SAN MARINO INTERNATIONAL
Test of October 19th, 1997 - outcome
Hosted by Exactweb

Check out the Web site **http://www.exactweb.com/RSMI** for updates.

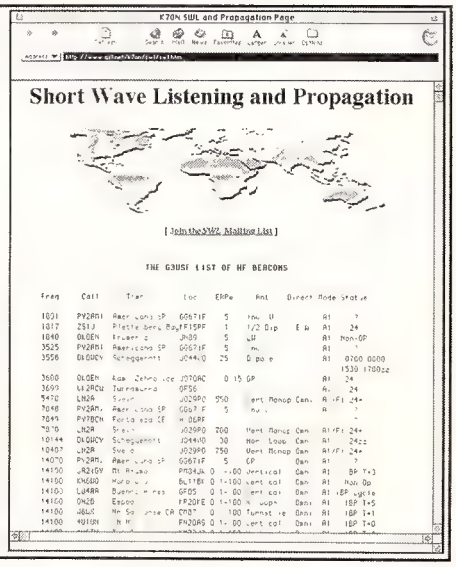
More on HF beacons and propagation

On K7ON's amateur radio pages at **http://www.qsl.net/k7on/**, we found a list of beacons that can be used by radio amateurs and shortwave listeners alike to judge propagation. The HF beacon list, compiled by G3USF, includes more than the beacons in the NCDXF/IARU Network that we reviewed last month. This list includes beacons with frequencies as low as 1801 (PY2AMI in Sao Paulo, Brazil). We also found one listed in Australia: VK2RCW, at Turramurra, on 3699 kHz CW. Check out the full list at **http://www.qsl.net/k7on/swl/swl.htm**.

By the way, as long as you are on K7ON's Web site, dial over to **http://www.qsl.net/k7on/email/mail.htm** and sign up for your favourite mailing list (also known as reflectors). There are a bunch of topics to pick from: bitbucket, home-brew, ham software, ham books, mobile / portable, Kenwood, fox_tango, Icom, Alinco, azham, Drake, Swan, antennas, greenkeys, SSTV-ATV and SWL. We found out that 'greenkeys' refers to the older, mechanical, teletype equipment still used by some (but not too many these days) radio amateurs.

Satellite tracking

Interested in tracking man-made satellites or other orbital objects — Mir — to communicate or view them? We found free software that fulfils the requirement so long as you are running Windows 3.1 or later. WinOrbit, tracking data, and more is available at http://www.sat-net.com/winorbit/. There is a signif-icant quantity of supplemental software products, including an audio package that uses the sound card and speakers to vocalise the azimuth and elevation, so you can keep your eyes on the sky during a pass. And there is a program to control some radios' tuning and antenna tracking.


K7ON SWL and Propagation Page
Short Wave Listening and Propagation
[Join the SWL Mailing List]
THE G3USF LIST OF HF BEACONS

50 MHz Web site

Raymond Vrolijk, PBØALN writes "Welcome to The Magic Band Network. On this page you can find information about a special band for radio-amateurs. On 50 MHz you will never know what kind of propagation pops up in five minutes so people started to call it 'The Magic Band'. Enjoy yourself and see you on SIX!"

Vrolijk has a very fancy framed page with that starts up with a sound file (sounds like the theme from *Mission Impossible*, an old TV show). There are links to six metre information, DXCC lists, PA 'firsts', modifications and more. Take a look at **http://www.xs4all.nl/~pb0aln/**, but be patient while the page loads for the first time.

Radiorama

Francesco Clemente of Italy writes "A new radiomedia is born....

"After nine months gestation, one day more or less, it is finally born! The name is Radiorama on Web, to be activated at the address http://www.radiorama.it... 51 pages for this Version 1.0 of general information on radio listening, on Radiorama and AIR. The Italian Radiolisteners Association and the services especially aimed at DX for the active radio listener. Visit us and let down your message!"

Unfortunately we don't speak Italian, but the lists and links should still prove useful. Dial up the Web site at **http://www.radiorama.it/**.

Press Services

In our never-ending search of what's new or radio-related on the Internet, we found "CubaPress - Agencia de Prensa Independiente".

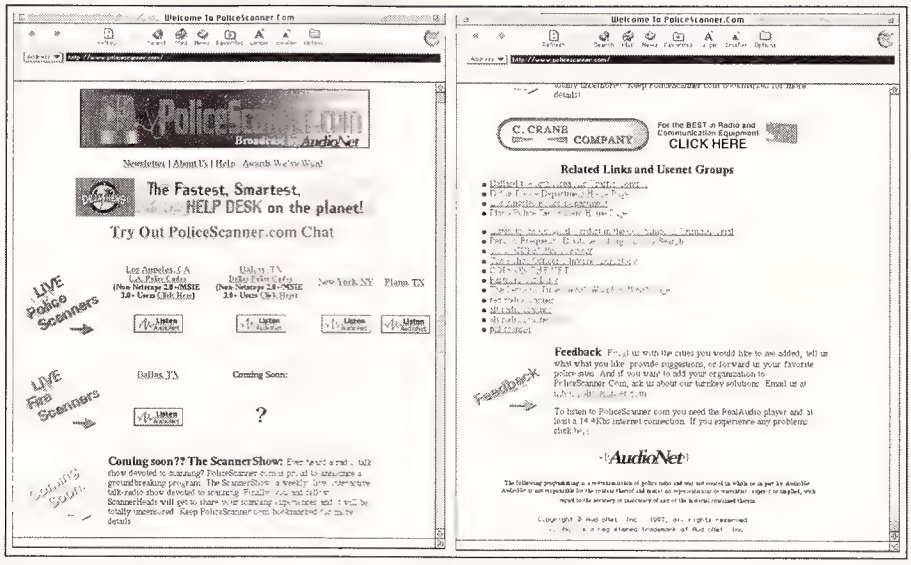
It appears to be a brand-new Web site, as the only item on the page is an 'under construction' image.

The page is dated August 5, 1997. We cannot tell if this is a pro- or anti-Castro news agency. Watch for developments at

Long distance scanning

Last year AudioNet, (http://www.audionet.com) at the behest of a Dallas, Texas, USA, police officer put the Dallas police department onto the net. The reaction was tremendous. After a few months, AudioNet added New York and Los Angeles police departments to its scanner feed lineup and created a division called Policescanner.COM.

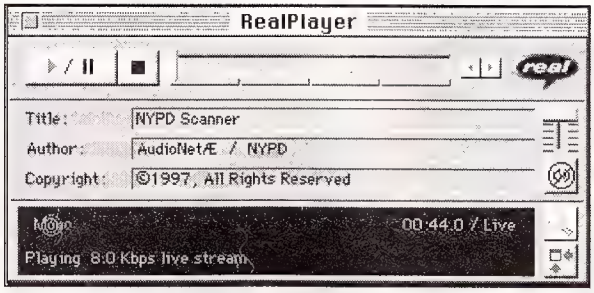
Police codes' translation appears on the Web site for those who are not familiar with the codes. Though this effort has not yet turned a profit, the outlook is good and AudioNet remains committed to the effort. Check it out:



• Install RealAudio, free at http://www.real.com. (RealPlayer version 5 beta was released last October.)

Welcome To PoliceScanner.Com
Broadcast by AudioNet
Welcome to the PoliceScanner.com CHAT. That's right Police Scanner Chat. Now all you police scanner fans can chat about the LAPD or the DallasPD. Help late comers know what calls are getting responded to and more. If you have any comments or questions about Police Scanner mail us at info@policescanner.com.
NOTE: To access PoliceScanner Chat within your web browser you will need an ActiveX browser like Microsoft's Internet Explorer. If you do not have IE you can download a free copy from here. If you don't want to use IE, don't fret, you can access our chat through any IRC client software such as mIRC(win) or IRCle(mac). Just open the client and connect to irc.audionet.com and join the channel #scanner.
Have fun.
Join the ActiveX Chat
Back to PoliceScanner.com

• Go to http://www.policescanner.com and click on one of the three listed police departments (Dallas, Los Angeles or New York).



The Dallas Fire Department is also aboard. And you will find a number of links to other scanning-related sites. When we looked at the Web site, an announcement said a radio talk show devoted to scanning "...is coming soon...". It may be active now. Take a look.

http://www.cubapress.com/. We checked Internic (**http://rs.internic.net/cgi-bin/whois**) and found CubaPress' registration to be in Miami, Florida, USA.

An archive of Bulgarian news was found at the Web site of the Bulgarian Telegraph Agency (BTA). The page is sponsored by the Hellenic Resources Network. Check it out at **http://www.hri.org/news/balkans/bta/**.

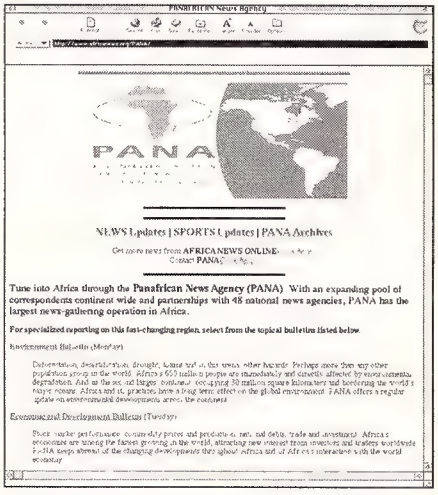
If you back up to the URL of http://www.hri.org/news/balkans/ there is a host of other major and minor Balkan press sources listed therein. For example, we found another page for the Albanian Telegraphic Agency... and a notation of the ATA's home page at **http://www.telpress.it/ata**. Back up another level to ../news/ to explore other venues.

The Athens News Agency (ANA) is the national news agency of Greece. "Founded in 1895 as a private company, the Stefanopoli Telegraphic Agency, the Greek State assumed its subsidisation in 1906, at which time it acquired its present name." The Web site includes current news bulletins in English and in French. The home page is **http://www.ana.gr/**.

The Panafrican News Agency (PANA) has changed its URL from http://www.nando.net/ans/pana to **http://www.africanews.org/PANA/**.

Inter Press Service (IPS) a provider "of information on global human security, is backed by a network of journalists in more than 100 countries with satellite telecommunications links to 1,200 media outlets.

"Founded in 1964 in Rome as a communications bridge between the countries of the North and the South, IPS quickly expanded, first throughout Latin America, then to North America, the Caribbean, Africa, Asia, Europe and the Middle East.


PANA
NEWS Updates | SPORTS Updates | PANA Archives
Tune into Africa through the Panafrican News Agency (PANA) With an expanding pool of correspondents continent wide and partnerships with 48 national news agencies, PANA has the largest news-gathering operation in Africa.
For specialized reporting on this fast-changing region, select from the topical bulletins listed below.

"IPS is a non-governmental organisation structured as a non-profit International Association of Journalists. It enjoys Category I NGO (non-government organisation) consultative status with the United Nations.

....☞

Baudwalking
(continued)

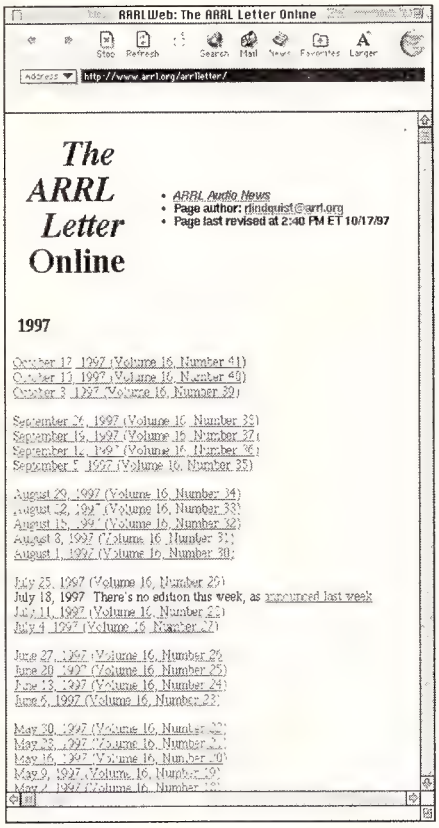
"The IPS news service is delivered daily in English, Finnish, Dutch, German, Norwegian, Spanish and Swedish."

The English language URL is **http://www.link.no/IPS/eng/**.

The Iran Press Service "is a private news gathering service covering Iran and its surrounding zone." It is a bit secretive, as the voice and fax telephone numbers are in the country of Andorra. The administrative contact is in Luxembourg, and the technical contact is based in or near San José, California, USA. Nevertheless, there are numerous news stories divided into categories of Human Rights and Terrorism, Regional Affairs, Iranian News, Opposition Corner, Comments and Analysis, Feature, and Art & Culture." There is a searchable archive as well. We have not read through all the material yet, but in our opinion here is another source of information to better understand the events in Iran and its neighbours. The URL is **http://www.iranpress.com/**.

The ARRL Letter

Almost every active radio amateur has heard of the American Radio Relay League in Newington, Connecticut, USA. The ARRL publishes the monthly magazine *QST* and some other publications for its members.


ARRLWeb: The ARRL Letter Online
http://www.arrl.org/arrlletter/
The ARRL Letter Online
ARRL Audio News
Page author: rlindquist@arrl.org
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October 17, 1997 (Volume 16, Number 41)
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September 19, 1997 (Volume 16, Number 37)
September 12, 1997 (Volume 16, Number 36)
September 5, 1997 (Volume 16, Number 35)
August 29, 1997 (Volume 16, Number 34)
August 22, 1997 (Volume 16, Number 33)
August 15, 1997 (Volume 16, Number 32)
August 8, 1997 (Volume 16, Number 31)
August 1, 1997 (Volume 16, Number 30)
July 25, 1997 (Volume 16, Number 29)
July 18, 1997 There's no edition this week, as announced last week
July 11, 1997 (Volume 16, Number 28)
July 4, 1997 (Volume 16, Number 27)
June 27, 1997 (Volume 16, Number 26)
June 20, 1997 (Volume 16, Number 25)
June 13, 1997 (Volume 16, Number 24)
June 6, 1997 (Volume 16, Number 23)
May 30, 1997 (Volume 16, Number 22)
May 23, 1997 (Volume 16, Number 21)
May 16, 1997 (Volume 16, Number 20)
May 9, 1997 (Volume 16, Number 19)
May 2, 1997 (Volume 16, Number 18)

The ARRL Letter is one of those 'other' publications. This weekly newsletter contains short news stories about the latest events in amateur radio and doings at the USA's Federal Communications Commission that affect amateur radio.

Though much of the material is oriented to amateurs in the USA, there are news items of interest to those outside the United States. For example, recent stories included amateur radio activities aboard the NASA shuttle and Mir, and the planned launch of the Sputnik 1 replica.

As a weekly publication posted each Friday (Saturdays in Australia), the information is weeks ahead of QST. Once a hard-copy newsletter sold only by mail subscription, now it is on the Web... and the printed version is no longer available.

Back issues are also available. When we last looked, issues dating back to January 1996 were on line.

The URL is **http://www.arrl.org/arrlletter/**.

Quickies

AWR Asia has dropped its pages on CompuServe at http://ourworld.compuserve.com/homepages/ awr_asia/. The new KSDA pages are within the AWR site itself, at http://www.awr. org/awr-asia/ guam/.

Radio Mayak, "Russian State's Radiostation" as the GIF tag says, is new to the Web at http://rmayak2. ortv.ru/. The only problem for us is that the page is in Cyrillic.

Slovak Radio reorganised the directories on its server. Radio Slovakia International's URL changed from http://www.slovakradio.sk/rsi. html to http://www.slovakradio. sk/rsi/rsi.html. Unfortunately the pages still do not contain a transmission or program schedule.

Get Your Red-Hot Translations Here...

Something for nothing? Well, almost. It is an ad for a language translator product, Globalink's Power Translator. As a teaser, you can have up to 1,000 characters (250-300 words) translated from English to Spanish, French, German, or Italian (and vice versa) free of charge.

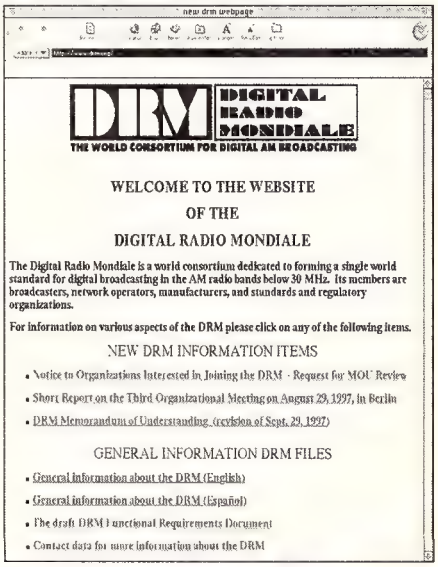
There are caveats, such as an inability to handle complex sentences, or metaphorical, colloquial styles. But if you are sending a reception report or QSL card and prefer to write a greeting or a sentence in one of the four languages other than English, this service may fit the bill.

If your browser cannot handle forms, an e-mail service is also available. (If your browser cannot handle forms, you should really think about upgrading the browser to version 3 or 4 of Netscape or Microsoft... but that's another story.)

Dial it up at **http://www.globalink.com/scripts/service.ixe?category=Free+Translations**. Note the capital letters in the URL.

Digital AM broadcasting

The advantages of digital AM broadcasting over conventional analogue AM transmissions are numerous. Aside from improved audio quality and immunity to interference, new services — such as multimedia and high-quality stereo — and better coverage for less power are outcomes of moving to the digital mode.


new drm webpage
DRM
DIGITAL RADIO MONDIALE
THE WORLD CONSORTIUM FOR DIGITAL AM BROADCASTING
WELCOME TO THE WEBSITE
OF THE
DIGITAL RADIO MONDIALE
The Digital Radio Mondiale is a world consortium dedicated to forming a single world standard for digital broadcasting in the AM radio bands below 30 MHz. Its members are broadcasters, network operators, manufacturers, and standards and regulatory organizations.
For information on various aspects of the DRM please click on any of the following items.
NEW DRM INFORMATION ITEMS
• Notice to Organizations Interested in Joining the DRM - Request for MOU Review
• Short Report on the Third Organizational Meeting on August 29,1997, in Berlin
• DRM Memorandum of Understanding (revision of Sept. 29, 1997)
GENERAL INFORMATION DRM FILES
• General information about the DRM (English)
• General information about the DRM (Español)
• The draft DRM Functional Requirements Document
• Contact data for more information about the DRM

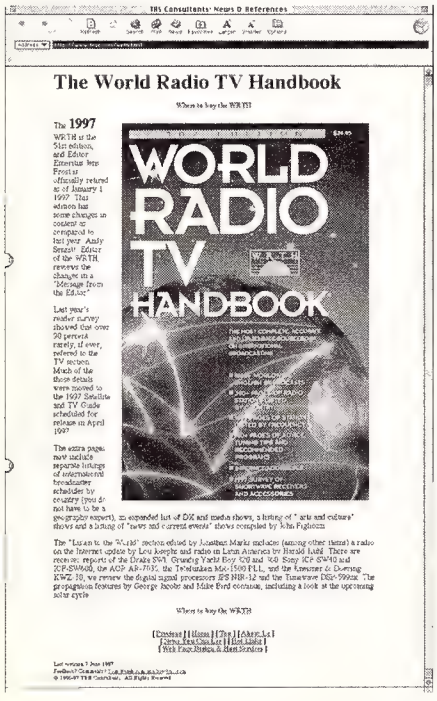
A consortium has formed to explore setting international standards for digital AM broadcasting below 30 MHz. (If you listen to Radio Netherlands' Media Network you have heard the topic discussed from time to time.) A total of four organisational meetings held in Europe, North America and the Far East in 1996 and 1997 have set forth the organisational structure for the consortium. Committees include policy, commercial and technical standards. The timeline? The consortium Web page says "Present schedules call for the completion of the technical work for a tested and completely functional digital AM system design and receiver and transmitter prototypes within three to five years."

Read about the consortium — Digital Radio Mondiale — at **http://www.drm.org/**.

Ludo Maes of the Transmitter Documentation Project has added a digital page to his Web site. There you can read more about digital AM broadcasting, including tests in France. Dial up **http://www.ping.be/tdp/ digital.html** to read about Thomcast's Skywave 2000, and more.

1998 World Radio TV Handbook

Shortwave listeners and broad casters around the world depend upon the WRTH, edited by Andy Sennitt and Bart Kuperus. The volume is organised by country within region. In recent years, Web URLs and e-mail addresses are included with the address, telephone number, and fax number. There are long wave, medium wave and shortwave station-by-frequency lists at the rear of the volume. The international shortwave broadcast schedules are placed at the rear of the volume (as these are the last pages to go to press).



Each edition has the 'Equipment Test Bench' with reviews of receivers and accessories released since the last edition. And Australia's Mike Bird covers the details of solar activity.

The 52nd edition of this industry standard normally ships from the printer to distribution sources this month. As the WRTH does not have its own Web site — at least not yet — we provide two pages of information on our Web site. Dial up **http://www.trsc.com/wrth.html** for updates on publication dates and other news.

In Australia, there are two WRTH distributors. One is a Radio and Communications advertiser, Dick Smith Electronics, so check your nearest store for stocks to arrive. If you are outside Australia, check the Web page for a list of distributors organised by country.

What have you found on the Internet lately? Drop us a note at trs@trsc.com. Our Web site is **http://www.trsc.com/**.

Ramping up the Internet
... an occasional series of hints and tips

Some thoughts on the PC Web browser wars

There are only two combatants still battling. Netscape launched Communicator in mid-year, and Microsoft released Internet Explorer 4 in October. (Within a week, there were over one million IE4 downloads.) The sniping continues. Microsoft expects to attract 50 per cent of the market, but Netscape counters with 'no way'. Numbers change, but the last statistics we saw indicated a market share of about 70-30 in Netscape's favour.

In our opinion, both standard browsers suffer from bloat. E-mail, a newsgroup reader, conferencing, push technology bringing content to the desktop and more push the size of these packages towards 30 MB of disk space. Microsoft, in its infinite wisdom, desires to integrate the browser into the Windows 95/98 desktop.

But something happened on the road to the product releases. Netscape ran afoul of Lotus, which would not put a competing product on systems with the Lotus groupware products. Lotus wanted only the browser... and Netscape caved in. The browser and the push technology were unbundled from Communicator to create Navigator 4.

Less than a week before Microsoft released the 'final' Internet Explorer 4, Microsoft responded to complaints of beta testers and flip-flopped on the standard install. Rather than take over the desktop, changing a myriad of settings, IE now offers three versions of the install (including a 'browser-only' version).

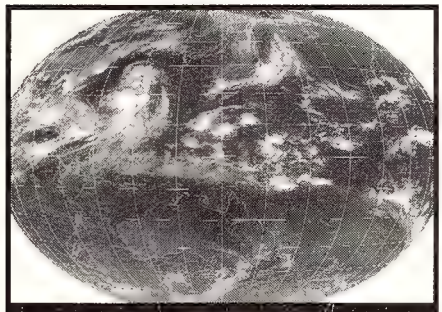
PC users will eventually be forced into Microsoft's grand plan of a browser-integrated desktop as Windows 98 comes to market in, probably, the second quarter of 1998. But for the moment, users who like their PCs as currently configured have a minor victory.

There's a saying — source unknown — that one should not install version 1 of any software package. To that end, we waited until Communicator 4.01 was released. We are now waiting for the first bug fix release to Internet Explorer 4.00.

The next step. As we prefer Eudora for e-mail and a variety of Web-authoring tools other than Netscape's Composer, we were not using most of the 24 MB Communicator's components. After Navigator 4 was unbundled, we opted to install the slimmer product. Rather than simply install Navigator 4 atop Communicator, we developed a procedure to ensure that all Communicator references were removed from the PC and the maximum disk space was reclaimed. The result? We reclaimed 14 MB of disk space. Here's how we did it:

- Copy the bookmark file (bookmark.htm) into another directory or onto a diskette.
- Uninstall Communicator from the Windows 95 Control Panel's Add/Remove Software option.
- Remove those items — folders et al — that the Control Panel's remove process did not take out.
- Run RegClean (available from Microsoft's Web site) to automatically clean up the Windows 95 registry, removing any Communicator entries that the Control Panel's remove failed to take out.
- Shut Windows 95 down and restart the PC.
- Install Navigator 4 (we opted out of installing the push component).
- Replace the bookmark file.

THE INTERNET, EMAIL AND OTHER THINGS OF GENERAL INTEREST... *By Thomas R. Sundstrom, W2XO*



WEFAX SATELLITES

By Arthur Andrews, VK2AAE
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Even six weeks after the October issue hit the stands, letters are still arriving for a copy of the WXSAT program. I have lost count of the number of copies I have sent out, either by mail or over the Internet, but it is well over the 200 mark. My thanks again for all your kind words about my articles; they are greatly appreciated and my special thanks to a further four readers who enclosed a donation towards my time and trouble.

There were many letters from readers who have wanted to get into satellite reception and now this has been made easier with the WXSAT program. Many wanted to know more about receivers, antennas etc, and in the new year I will run an article or two on that subject. My thanks also to readers who have sent, or made me aware of, shareware or freeware programs on other facets of our hobby such as slow-scan TV and other digital modes of reception. There are certainly a *lot* of programs about now for amateur and shortwave listeners to play about with.

Graeme, VK2VGV, was a very good friend of mine and he and his wife Jenny made frequent visits to our farm over the years. Graeme shared my interest in weather satellites and during his visits we spent hours on antenna construction projects, of which some worked and others didn't. About five years ago Graeme contracted cancer and was given only four months to live, but being a fighter and receiving treatment he hung on for a long time after that. It was sad to see him gradually decline and towards the end he could not make the trip up here although he did want to come up for one last time to say goodbye. Sadly, in early October he made the journey to the big ham shack in the sky. He was a gentleman in every respect and a dear friend. Vale, Graeme, VK2VGV.

I waited eagerly for October 1 to come, the day on which China was supposed to switch on their Wefax transmissions on 1691 MHz. Despite frantically scanning the sky with the dish in case I had got my coordinates wrong, I could find no signal. I tried for several days with the same result. It was definitely *not* transmitting.

I contacted Mike Kenny at the Satellite Division of the Bureau of Meteorology in Melbourne and he confirmed that Feng Yun 2B was not transmitting. At that stage he did not know why but hoped to find out when some visitors from China arrived.

I may be wrong, and I hope I am, but I have a sneaking suspicion that all is not well with this satellite. If this assumption is correct they are certainly not having much success with their geostationary weather satellites as the first one blew up and caught fire prior to launch a couple of years ago. Anyway, I will continue listening in case they can fix the suspected fault. It is a pity that it is not operating as I wanted to see a bit further around the corner.

The launch of the latest NOAA weather satellite, NOAA 15 when operational, has been delayed again and is not now expected to be launched until early 1998. So we are still left with the old faithfuls NOAA 12 (137.50 MHz), NOAA 14 (137.620 MHz), Meteor 3/5 (137.850 MHz) and possibly Meteor 2/21 on the same frequency although images were becoming increasingly poor when it was last switched on.

In late September a new imaging satellite called **Seawif** was launched, though I have seen it referred to as Seastar or Orbcom-2. However what it's called is immaterial — it was what it was doing that counts. A few weeks ago Neville Blyth, one of our readers, put me on to a server site which is a mine of information on weather satellites with contributions from all over the world. Thanks Nev, it is a real beaut. For those who are interested the site can be found at **wxsat-request@ssg.com**

On looking through my mail from the above site I came across a couple of mentions regarding this satellite and that at the moment was transmitting non-encrypted images on 1702.5 MHz, and instead of the five channels normally transmitted by the NOAA satellites this one was actually transmitting *eight* channels in the same format as those of the NOAA transmissions. I was lucky that, when I purchased my HRPT system a while ago, I chose the Timestep product as unlike most other companies its HRPT receiver comes with four separate frequencies plus space for an extra one. Besides the two frequencies normally used by the NOAA spacecraft it also included the two standby frequencies, one of which was the frequency that the Seawif was transmitting on.

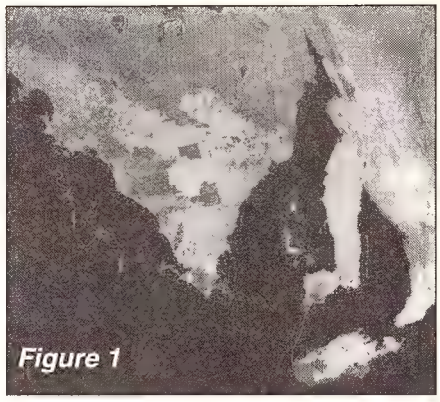


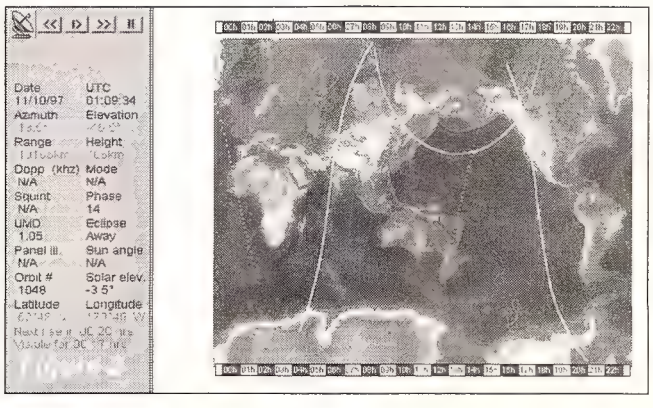
Figure 1

The signals were processed by the Timestep HRPT software but as there were eight channels instead of the normal five the images were streaked with vertical lines though the general image was still discernible. Within days Timestep had written a free conversion program to apply to the Seawif images which allowed the full eight-channel capability, and had posted it on the net. It also posted the Keplerian elements so that the satellite could be tracked.

The NOAA satellites orbit at around 850 km whereas Seawif is at around 700 km, which gives good resolution but a shorter access time. It fairly shoots across the sky on an overhead pass. The conversion file turned the images into raw data format and then could be loaded into a graphics program for viewing. I had a bit of a problem with this at the start, but Peter at Timestep put me on the right track and I now have good images.

At this stage there are no details on what the satellite is being used for, but I would assume from its name that it has something to with sea or ocean sensing. All eight channels appear to be in the visible light range but all the images from channel to channel differ in some respect.

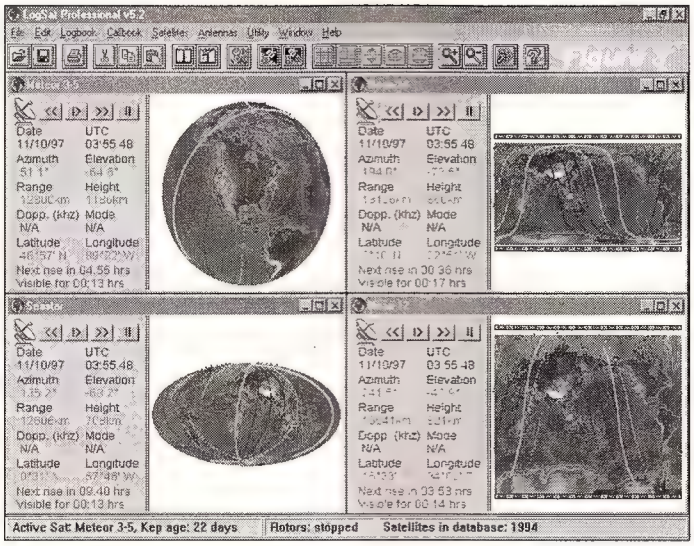
Using a good graphics program you can combine various channels to obtain a multi-spectral view. In a future article I may go into that facet a bit more deeply. It is thought that encryption will take place once the satellite is tested so at the moment I am copying every pass the satellite makes. **Figure 1** shows a Channel 8 image of part of South Australia.



The Japanese Meteorological Agency has confirmed that its next geostationary weather satellite (replacing GMS 5) will be transmitting digital images instead of the normal Wefax mode as used now.

However it will continue transmitting Wefax images for some time before it is switched over permanently to the digital mode. More details as they come to hand over the coming months.

Many readers have requested information on satellite tracking software, as now they have **WXSAT** they want to know where the satellites are. I have used various tracking programs over the years so it was with interest that I read that Logsat in the USA had introduced an updated version of its **Logsat Professional** satellite tracking software which runs under Windows 3.1 or Windows 95. I contacted Logsat and it was pleased to send over a copy for review and evaluation and within a few days it arrived in the mail box.



The Logsat Professional v 5.2 program came on a CD-ROM and will run on any computer, 286 and above, fitted with 4MB of RAM, but for best results a 486 with sound card and 32MB of RAM is needed to take advantage of the high resolution graphics, though the normal resolution graphics are very good.

Installation was a breeze and you are invited to enter your station elements such as latitude, longitude, height ASL, time zone etc. Besides being a satellite tracker, the software contains a lot of other features which is evidenced when you go to the main window. The top menu bar has the usual File and Edit menus, plus Logbook, Callbook, Satellites, Antennas, Utility, Windows and Help menus. I will get back to some of these menus later.

Directly beneath are the Tool Bar buttons which allow you to open files, save files, print, cut, paste, view log book, add to log book, find call, selection of satellite normal and rapid, and five buttons for the selection of the following map projections: Mercator, Equidistant, Sinusoidal, Hammer, and Orthographic. As well, you get zoom in and zoom out functions, a locator and help. There is no manual included but a very sensitive help menu is included to take you through all the features.

One thing I liked from the start is that the program *talks* to you. Besides greeting you when you switch to the program it warns you three minutes before any selected satellites are due, tells you the bearing of the satellite on access and warns you when contact is lost.

As this program can be run in the background whilst you work on something else this feature is very handy. You can customise your voice warnings by the use of .wav files if you wish. Subject to memory constraints, you can display as many satellites in the window as you like.

Unfortunately, because the pictures cannot be printed in colour in the magazine the full quality of the map windows cannot be fully appreciated, but take my word for it, they are good. As mentioned earlier you can select any number of satellites to put in the main window and you can tile them either vertically or horizontally. Personally I prefer only four or five. You can of course just select one satellite of interest and have a full page image.

Figure 2 shows a single map for the Seawif satellite, but due to the printing limitations, what you probably can't see is the satellite name and position marked on the map and also my location shown. On the right of the map is shown the date and time, Azimuth and Elevation, Range and Height, then several optional readings which can be programmed in if you want these feature, followed by the Latitude and Longitude, time of next rise (ie 20 minutes) and duration of pass.

At the top of the column is a satellite dish button and, if it's activated and you have a satellite tracking card in your computer, the program will automatically steer your dish to follow the satellite across the sky. The other buttons allow you to fast forward or reverse the satellite(s) on the map image. Such features as the size of the satellite trails, placing sun terminators, colour fill maps, select map colours, line styles and more can be selected by a click of the mouse.

Another feature is that you could select five different projection types for one satellite or display multiple satellites in different projections. **Figure 3** shows four satellites in four different projection types. All maps can be zoomed to a particular area of interest. Maps are updated as the satellite progresses. At the foot of the map the age of the active satellite's Keplerian elements are shown, together with the status of the dish rotator (if you have an interface) and the number of satellites in the database.

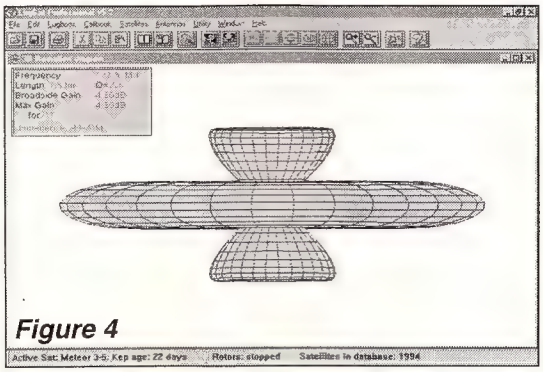


Figure 4

To go through every feature of this package would take a full-sized article but I will take a brief look at the various menu choices to show what is available.

Log Book and **Call Book** for recording amateur or SWL contacts. The Satellite menu has several commands related to the satellites included adding, and updating of Keplerian elements in either NASA or AMSAT format automatically, or manually.

The **Antennas** menu contains some very interesting aids in antenna propagation and analysis. The choices available are:

- 3D Radiation Diagram. (See **Figure 4**.)
- Fixed length variable frequency analysis charts.
- Variable length fixed frequency analysis charts.
- Propagation diffraction over a round earth charts.
- Propagation over a round earth charts.
- Propagation over a flat earth charts.

The **Utility** menu contains a station location program.

The CD-ROM also has a shareware copy of the *Satellite Encyclopedia* which is a mine of information on hundreds of satellites both old and new. The Encyclopedia can be accessed from the main window by pressing CTRL+F1 at any time.

I found the Logsat Professional package fascinating, and it contains many features not normally found in a satellite tracking program.

A visiting amateur friend saw it running and decided to order it straight away. With Christmas coming up it would be an ideal item to include in your wish list to Santa...

The Logsat Professional can be obtained from Logsat Software, 425 S Chickasaw Ste 104, Orlando, Florida 32825, USA. The cost is $US69.95 plus shipping and handling. Internet users can order it direct, and there is also a free interactive demo version which can be downloaded from **http//www.logsat.com**.

For New Zealand readers the Logsat Professional software can be obtained from Maxsys Corporation, PO Box 31-227, Lower Hutt, New Zealand. Phone 0011 64 4 570 1577, fax 0015 64 4 569 2881, or E-mail maxsys@netlink.com.nz.

Next month I hope to finish the article about my HRPT system and have some images to display from the new satellite.

All the very best to you all — especially to the more than 600 people who have written to me since I started these articles a couple of years ago.

Cheers and happy satellite hunting.

What Time Is It?

Does your PC know for sure?

By Thomas R Sundstrom, W2XQ

Time is fleeting, never to come again. But what time is it?

Amateur radio operators look to the correct time for routine and contest logging. Those using computers to link their HF and VHF transceivers to multi-mode digital TNCs with mailboxes typically time-stamp messages and activity logs. Contest sponsors require accurate logs, and there are a variety of computer-based logging programs for the choosing. Some contest software is so sophisticated that a small network of personal computers can be hooked together to display activity, contacts, and needed stations, countries and multipliers to all operating desks.

Shortwave listeners depend upon a UTC clock to translate international broadcast schedules to the local day and time. DXers often look to greyline targets, and GeoClock (**http://www.clark.net/pub/bblake/geoclock/**), with its many large-scale maps, is an ideal tool for watching the effects of sunrise or sunset at the transmitter site. Additionally, logging software for the listener is available too.

There are many people expending resources tracking time. Governments, astronomers and scientists look to national measurement and standards organisations to provide precise time standards. Readers of *Radio and Communications* are well aware of UTC (Universal Coordinated Time) announced by standards stations around the world on, amongst others, 5, 10 and 15 MHz.

But clocks — whether mechanical, electronic, or buried within the circuitry of a computer's motherboard — are not perfect.

Clocks gain or lose time, or stop altogether. For those with a personal computer and access to the Internet, there are effective solutions to set the time on a personal computer... automatically and precisely.

We looked at five time synchronising software applications for the 32-bit Windows 95 and Windows NT user connected to the Internet. Our testing revealed some surprising differences between the offerings, and we changed our minds more than once in selecting our favourite application.

The summary

Table 1 (below) summarises the details including the program name, the individual or company, and the Web site where you can download the latest version. Here's an explanation of the other columns:

File Size to Download: The size of the file in kilobytes to download.

Diskspace Required After Installation: Two downloads around 900K included install programs, whereas others were .ZIP files and left it to the user to make folders and shortcuts.

Program	AtomTime95	Dimension 4	Nettime	Tardis for Windows 95	YATS32
Shareware				US$20	US$25
Freeware	✓	✓	✓		
File Size to Download	107K	155K	828K	137K	900K
Diskspace Required After Installation	1428K	315K	392K	270K	192K
32-bit memory in K used when running	376K	604K	48K	1240K	1240K
Function behind firewall	✓	✓	✓	✓	✓
Dial-up connection	✓			✓	
Launch, adjust time and exit	✓	✓			✓
Automatically repeats time check		✓	✓	✓	✓
Manual time check	✓				✓
Shows time discrepancy	✓	✓		✓	✓
Warns if time off large amount		✓	✓		✓
Turn off warnings		✓		✓	
Shows Internet delay			✓		
Time server list included		✓	✓	✓	✓
Australian time server(s) included		✓	✓	✓	✓
Shows in taskbar		✓		✓	✓
Shows in desktray	✓	✓	✓	✓	✓

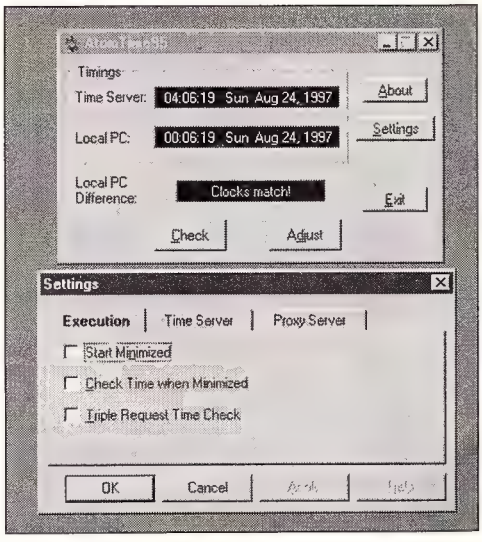
AtomTime95, by Bruce Adelsman, is available from **http://www.wavefront.com/~badelsman/Software/**.
Dimension 4, by Thinkman, is available from **http://www.thinkman.com/~thinkman/**.
Nettime, by Grahm Mainwaring, is available from **http://www.mhn.org/~graham/nettime.html**.
Tardis for Windows 95, by H C Mingham-Smith, is available from **http://www.kaska.demon.co.uk/**.
YATS32, by Dillobits Software, is available from **http://www.dillobits.com/**.

32-bit memory in K used when running: We used the Microsoft KernelToys' WinTop to get an estimate of how much memory was consumed in running the software.
Function behind firewall: We tested these on a government's network.
Dial-up: We tested these on a dial-up connection to a local ISP.
Launch, adjust time and exit: Double-clicking on the app starts the process and it exits after setting the time.
Automatically repeats time check: App stays memory-resident and gets then updates time at user-selected intervals.
Manual time check: The user has to intervene to get the time.
Shows time discrepancy: The difference between the PC's clock and the time provided by the time standard source.
Warns if time off by large amount: A warning dialogue box shows if the discrepancy exceeds a limit.
Turn off warnings: Can the discrepancy warning be turned off to allow uninterrupted background operation?
Shows Internet delay: Just as time signals via radio are delayed by propagation and distance, there are microsecond delays (latency) in the Internet circuit path.
Time server list included: There are time servers throughout the world, but some applications default only to the atomic clock in Boulder, Colorado, USA
Australian time server(s) included: Does the list include Australian time servers, or do you have to go hunt for them?
Shows in taskbar: The Windows 95 taskbar labels.
Shows in desktray: The icons in the 'tray' on the taskbar, to the right.

...and comments

AtomTime95

Search such high-profile software sites as download.com, shareware.com and the Ziff-Davis files area, and you will probably find only AtomTime 95 in the listings — a shortcoming of these software Web sites.

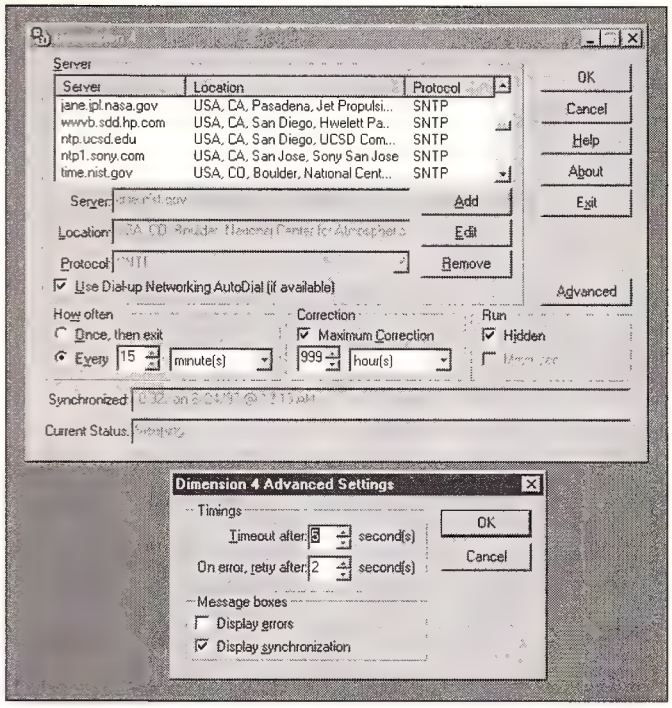


This application is an easy-to-use freeware program with two push-buttons to check and set the time against the atomic clock in Boulder.

It is unsuitable for radio amateur contesting environments, as it requires the user to set the clock — taking time away from making just one more QSO. The author says another version with more — as yet undefined — features is forthcoming as shareware (probably US$10), but the freeware version will still be available.

Dimension4

We liked D4 as soon as we first loaded it onto a networked PC. It provides a lot of feedback and flexibility. If you are in an amateur radio contesting environment and trust



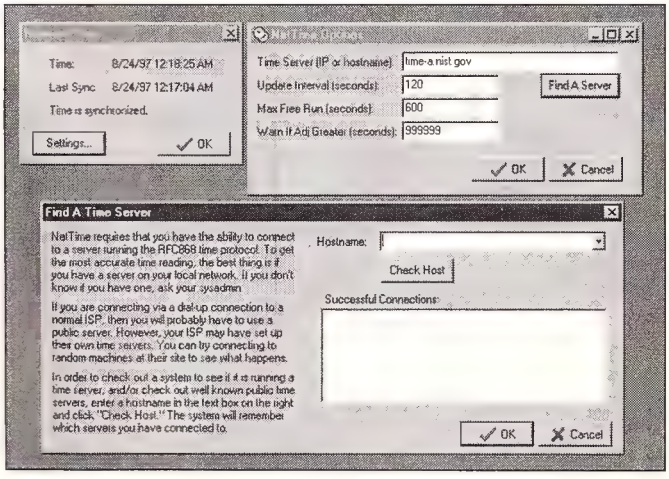
the time server you are connected to, you can turn off the warnings to let it operate without user intervention in the background. Or you can specify the amount of the time discrepancy to correct, up to 999 hours, and otherwise alert you to the discrepancy.

D4 is annoying in a dial-up environment though. As soon as the program is launched, it attempts to make a connection to the time server of choice. If you have D4 in the Windows 95 Startup group or launch it while not connected to the Internet, it launches the Winsock connection application — and you have to cancel the Winsock application before continuing to work with other PC applications.

Nettime

This freeware program has the smallest 'footprint' in the PC memory, a significant advantage for a networked PC that may have its memory cluttered with networking drivers and programs. Interestingly, nowhere in the application screens does it say who the author is... and there is no help file.

But the program is exceedingly easy to configure. One button opens a dialogue box for selection of a time server from a list. Select a server to 'test' the response time. Then pick the server of choice showing the minimum delay. Launched by the Startup group, it hides in the tray.

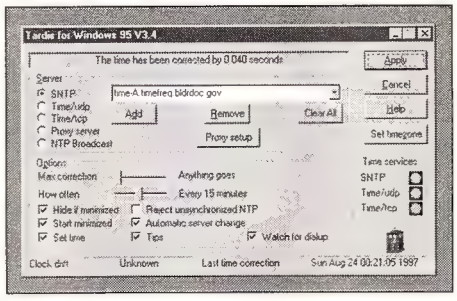

Time: 8/24/97 12:18:25 AM
Last Sync 8/24/97 12:17:04 AM
Time is synchronized.
Settings...
OK
Time Server (IP or hostname): time-a.nist.gov
Update Interval (seconds): 120
Max Free Run (seconds): 600
Warn if Adj Greater (seconds): 999999
Find A Server
OK
Cancel
Find A Time Server
NetTime requires that you have the ability to connect to a server running the RFC868 time protocol. To get the most accurate time reading, the best thing is if you have a server on your local network. If you don't know if you have one, ask your sysadmin.
If you are connecting via a dial-up connection to a normal ISP, then you will probably have to use a public server. However, your ISP may have set up their own time servers. You can try connecting to random machines at their site to see what happens.
In order to check out a system to see if it is running a time server, and/or check out well known public time servers, enter a hostname in the text box on the right and click "Check Host." The system will remember which servers you have connected to.
Hostname:
Check Host
Successful Connections:
OK
Cancel

Psst! Got the time, buddy?

No mess, no fuss. If your time server is reliable, you'll never have to look at the program again. This is the only program we tested that shows the latency of the 'net. For a dial-up user, Nettime behaves as Dimension4 — it automatically opens the Winsock application if you are not already connected to the 'net.

Tardis for Windows 95

On a networked PC, Tardis initially appeared to be similar in function to Dimension4. But there are some interesting differences that we like. In particular, we think Tardis may well be the best choice for the contesting radio amateur. It doesn't get in the way in the heat of the battle... err, contest.



You can control the warning on the time discrepancy. If you have the 'Max Correction' set to 'Anything goes', there is no warning message. It updates the time without getting in the operator's way. If it fails to get the time from the server, you can optionally configure the application to go to the next time server in the list. Additionally, Tardis can function as a time server to networked PCs (but we could not test this function).

In selecting a time server, the time setting may be turned off to first check the timer server for functionality (to see what time you are going to get). For the dial-up user who wants a time program to automatically update the time without intervention — unlike AtomTime95 — Tardis behaves well.

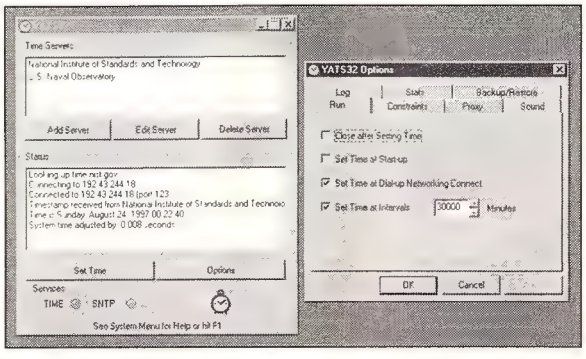
Unlike Dimension4 and Nettime, Tardis does not launch the Winsock client application. You can launch this program in a Startup group and it will monitor for a dial-up connection before setting the PC clock. It even waits 15 seconds after sensing that a connection has been made — a nice touch to ensure it won't conflict with other Internet applications starting up.

And we like the author's approach to the shareware business. The product is not crippled and there are no nag screens. If you use the program, you are on your honour to send in the modest amount requested.

YATS32

We found out that YATS means 'Yet Another Time Synchroniser'. The screens are somewhat Spartan compared to Dimension4 and Tardis. More expensive than Tardis, the Australian user has to do some configurations here. Only two servers — in the USA — are provided as default entries, but you can add more to the list.

It is not entirely clear that a directory is available. Upon clicking the 'Add' button, we found a new dialogue box that offers a 'Directory' option. The time discrepancy warning dialogue box cannot be turned off, but you can circumvent the alert to a maximum of 8 1/3 hours.



The application automatically tries to connect to the next server in the list if it fails to make a connection. If no connection is made after trying all entries in the list, then a warning message dialogue box appears. For dial-up users, akin to Tardis, YATS32 can launch in a Startup group and it will monitor for a dial-up connection before attempting to get the time.

Unlike Tardis, if the connection to the Internet is not made after the user-specified time-checking interval (measured in minutes, up to 8 1/3 hours), YATS32 will launch the Winsock client application.

So which one is best?

If you only need to set your PC clock on occasion, AtomTime95 is the easiest solution. Just run the program whenever you want to correct the time. The other programs all remain in the computer's memory, and set the time at regular intervals. On a network, the choice comes down to your preferences on the user interface. If you want a network solution for a PC used by someone not familiar or comfortable with Windows 95 applications, the tiny Nettime is an ideal solution.

On a dial-up connection to the Internet where the PC is not always online, clearly Tardis is the best behaved of these applications. For amateur radio contesters operating multiple transmitters, Tardis offers a possible solution to the time synchronisation of the PCs at the several operating positions.

Our preference? As we are on a dial-up line most of the time, Tardis is our choice... but there are close seconds. If Dimension4 were to add a few features in its next upgrade, the comparison may be very interesting.

Our recommendation is to look at several applications, and then make your choice. Further, we recommend adding all these URLs to your bookmarks or favourites file to periodically check to if new versions have been released.

More information

When you download one or more of these applications, you will note that up to three protocols are mentioned within the instructions and help files. RFC1361 describes SNTP (Simple Network Time Protocol), the most popular of the time servers on the Internet, as it performs some compensation for the network delays. Other protocols do not do so; rather, the data is just 'dumped' to the address where the query emanates.

As an amateur radio operator or shortwave listener, do you need to know any of these details to use these time synchronising applications? The answer is an emphatic 'no'. Your computer's clock will be adjusted to within milliseconds of the time standard.

"But I want to know more...!", you cry. The place to start reading is at the Time Service Department Web pages — **http://tycho.usno.navy.mil/** — at the US Naval Observatory, Washington DC, USA. Click on the link 'Setting your computer to USNO time' to move to another series of links.

There is a compilation of time synchronisation software for other platforms (eg Macintosh, OS/2) and a 'Network Time Protocol' link to lists of Network Time Protocol (NTP) servers around the world. We found five in Australia...

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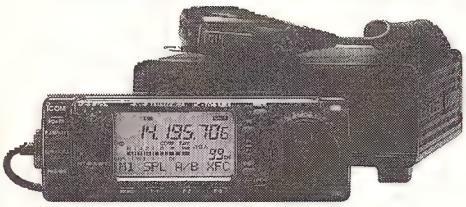

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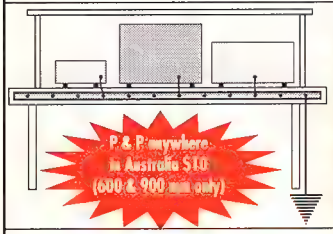

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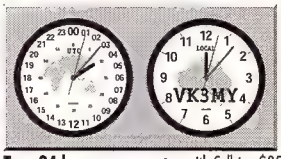

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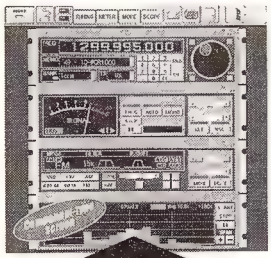

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John Batty, VK4MBK, reports on his

SHORTWAVE LISTENING WITH A DIFFERENCE

Forget the broadcast stations — here's where to find the really interesting ones...

John Batty *(caradoc@peg.apc.org)* grew tired of listening to your 'run of the mill' shortwave stations some time ago and now concentrates on some very unscheduled operators. Few would deny that his loggings are somewhat more interesting than the commercial stations...

Simon from the Gold Coast sent an email this month with some interesting loggings; he confirms that although action on 261.85MHz, on the FLTSATCOM PacWest satellite, has been patchy, it is still taking place, at least in mid-October.

My discone seems to have gone deaf for satellite signals lately but I did hear a few weak signals on 261.85MHz and a female USAF pilot obtaining an airfield weather report on 261.95, which is also the PacWest bird, so it looks as though the changeover to the UFO satellites is not complete yet.

Simon also reported a fascinating exchange monitored on the Brisbane Centre frequency 130.4MHz during the evening of October 1; although not strictly within the sphere of 'military monitoring' it certainly rates as an X-File, especially to all of you out there who are currently following the wave of UFO sightings in the UK, Brazil, Australia and other places...

Sometime between 2330 and 1210EST Simon heard LIFESAVER 4, the Westpac Rescue helicopter based at Lismore, call Brisbane Centre while he was enroute north from Lismore to Brisbane, asking if Brisbane was painting any traffic in his area. Brisbane replied that there were two aircraft northbound in the vicinity of Jacobs' Well, which is just north of the Gold Coast, but nothing else on radar.

LIFESAVER 4 replied that he had sighted a triangular formation of three lights (colour not reported) heading south, about a mile away (direction not reported) and about 2000 feet above his level; he had lost sight of the lights as they reached and entered cloud. Brisbane Centre checked again and confirmed that they had nothing on radar to explain the sighting. The following night the same aircraft reported a brief 'all-encompassing light' which seemed to come from above and behind them, again with no traffic showing on Brisbane radar.

The MI6 numbers station CHERRY RIPE is active on 17,499kHz from 2300z until 2345z. Simon reported this activity takes place Monday to Friday; I checked it on a Wednesday and sure enough, there she was. The transmitter used is supposed to be the USAF facilities on Guam; I had the signal at S8. Also reported active by Simon is a female Spanish numbers station operating on 8989kHz from 0800z on Wednesdays. She begins with "Attencion, 794 03" repeated 20 times, followed by "03 85" repeated five times, then into five-number groups, ending with "Final, Final".

121.2MHz:

At 0038z, COLT 1 and COLT 2, two RAAF F-111 aircraft, were the subjects of a Brisbane Centre broadcast advising of operations in the Tabulam/Coolamunda and Pine Creek reservoir areas involving abrupt vertical manoeuvres. 25 minutes later, COLT 2 was contacted by Brisbane on 123.9MHz warning that callsigns SNAPPER and TUNA were operating in close proximity to the F-111s.

POSSUM BLUE, an Australian Army Bell Kiowa helicopter of 161 Sqn, reported to Brisbane Centre leaving Julia Creek enroute to Mount Isa at 0756z.

17,344kHz:

RAN A6 frequency; Darwin Control conducted a radio check with trigraph U1Y at 0353z.

13,279kHz:

Khabarovsk Volmet is read out by a human operator rather than a voice synthesiser; heard at 0808z at S9, she had a bit of a coughing fit in the middle of it. Synthesisers generally avoid that...

13,200kHz:

Between 0230z and 0315z Hickam seemed to have misplaced three B-52H bombers belonging to 23BS at Minot AFB North Dakota; they gave repeated All-Frequency Requests for ICER21, ICER 22 and ICER 26, all to no avail. If you see something 49.05m (161 feet) long, grey, with eight engines hanging off 56.39m (185 feet) span wings, please let Hickam know...

13,116kHz:

RAN A5 frequency, 1342z-1350z; both Darwin Control and Canberra Control calling station VYO. The only VYO I have listed is the Canadian Coast Guard Station at Tuktoyaktuk, North West Territories (VYO-21).

9037kHz:

Unusual signals here involving single-letter callsigns M, P, O and L; this is a US Navy discrete frequency, and terms used during uncharacteristic social chitchat between the operators confirm they are USN. They appear to be some kind of tracking net, and seem to be on board different vessels.

They are a little difficult to read as they are often hidden behind Asian QRM, but snippets of conversation picked up between technical overs include; "...I think we're going to the same place as you next...", "...We'll be in Camel Country from HG to GL (date codes)...", "...Probably doing the same exercise together; I've never been there, definitely going to do a few tours...".

An interesting semi-technical exchange was "...Have you ever tried to explain a CC to a DS?"; reply "...Not easy..."; "...Like, if we had a Vampire inbound and you guys had to do a shoot...". Interesting because VAMPIRE is a USN acronym for "Injured personnel on board". Best heard in Eastern Australia from about 0600z onwards.

8983kHz:

T7N called CAMSLANT Chesapeake (Virginia) at 1132z requesting a secure frequency; advised that CAMSLANT "...not equipped for secret comms tonight...". CAMSLANT then called Coast Guard Rescue aircraft 1720, 2133 and 1717. The only answer came from CGR-1717; at 1135z he was told by CAMSLANT "...be advised we will be passing you some information shortly regarding Safety of Flight issue — stand by this frequency...".

At 1138z he was handed a phone patch with Miami Ops; the following exchange then took place: Miami: "...Confine your search to north of 16°15'N and remain at present 1000ft altitude to avoid conflict with other aircraft...". CGR-1717: "...Please pass this info via our Air Control Centre, since

they have UHF comms with the other [search] aircraft...". Miami: "...The ACC say they do not have the time for you right now — be advised, there is another aircraft south of your search track...".

Another strange one; one would think that an aircraft straying into a search area would be given the choice of assisting with the search or get out of the way, rather than diverting search aircraft around him. And Miami seemed to make a point of NOT elaborating on the identity of the "...other aircraft...".

8979kHz:

E2J called P5W but was answered by HABITAT at 0738z. HABITAT is Moffat Field Naval Air Station. E2J requested HABITAT relay to P5W that he was to contact the Coast Guard on 5693kHz. HABITAT asked him to "...go green...", but E2J didn't have the capability. I switched to 5693kHz just as QD-450 was informing the Coast Guard "...I will have my homeplate contact them and let them know what we saw here...". No further sigs heard this frequency; back on 8979kHz 15 minutes later E2J was calling HABITAT again with no joy.

8974kHz:

A very brief radio check called in to AF Townsville by station 27 MOBILE went unanswered at 0843z.

KIWI 324 had an in-flight dental emergency to relay to Dental Section via AF Auckland at 0210z. A crew member had shattered half a molar. (It's the little seeds in the In-Flight Lunch slab of fruit cake, guys).

8971kHz:

A real rarity showed up here between 1146z and 1220z; PETREL-01, a Royal Air Force Nimrod ASW aircraft of 42 (Reserve) Squadron, RAF Kinloss, Scotland, worked BLUESTAR, C1H, M2I and AJ8 during the period. Also in the group were LANCER-08, LANCER-21 and 30F. LANCER-08 reported that he was 50nm from the furthest SW point of his area, while LANCER-21 was 50nm from the furthest NW point of his, and PETREL-01 reported "...Mickey base time minus decimal 55...". PETREL was so clear I could pick the mild Scots accent on the pilot. My QSL to RAF Kinloss has not been acknowledged (at least not yet).

Next day, FALCON-01 was on freq with BLUESTAR, CASHBOOK-08, 8HT and B2H. The FALCON callsign in this context seems to be mission-specific, as different operators regularly use it.

This time it was a female operator with a heavy European accent; she was having a lot of trouble being heard by anyone, calling both other stations from 1005z until 1126z with only one acknowledgment. She requested BLUESTAR pass her Ops Normal message to PJK via landline.

The PJK stations are listed as being Suffisant Dorp Naval, Curacao (in the Netherlands Antilles, near the Western end of the Panama Canal) but her accent wasn't Dutch.

8HT requested her state and received the reply that there were 10 souls on board (fits for a P-3 Orion); at this point a strong male voice with the same accent took over comms on FALCON, asking 8HT if he was their ACU for this mission.

On receiving an affirmative, FALCON queried this as B2H was the briefed ACU. Once they had sorted that out between them, 8HT gave his position as N03°54', W65°15' and asked FALCON for their "FW". "I am not familiar with your expression," was the reply. "Your *position*", said a frustrated 8HT. FALCON reported as being 180nm away on a 40 degree bearing from 8HT.

8968kHz:

SHARK 21, a RAN Sea King helicopter (HS817?) was trying to put through a PP via AF Darwin at 0319z. The call went unanswered and SHARK supplied an alternative number, but then advised that he had to land and would call back in 15 minutes. Not heard again...

Callsign T3T called R2B and V3B at 1036z, repeating each call six times with no luck. Strength 7 here; minutes later callsign STORMHAWK called any station for a radio check and got Andersen. STORMHAWK was the same operator as T3T.

RAID 34 called Hickam at 0500z to ensure he had the current message traffic; was advised that EHBHGU was the only current message (and he already had that).

The RAID callsign is shared by the B-1B Lancer bombers of 319BW, Grand Forks AFB, and the KC-135 tankers of 905ARS who in-flight refuel them.

TOTEM 66, a C-130 Hercules of 517AS/3W (PACAF), Elmendorf AFB Alaska, called in a radio check to Hickam at 1244z.

8957kHz:

EIP, Shannon Volmet, Ireland, S5 at 0715z.

8712kHz:

From 2150z, callsigns GR, GW, GT, AM, ON, TF and DIAMOND 04 heard (by Simon, Gold Coast), seemingly engaged in an intercept of some kind, with the bi-graph callsigns tracking a target and DIAMOND 04 and another DIAMOND aircraft intercepting.

Reference was made to "...AEW assets..." (AWACS), "...tracking unknown target..." and "...escort bogey to international waters...".

The only intercept-capable unit I have listed which uses the DIAMOND callsign is 419 Tactical Fighter Wing, 466FS, USAFR at Hill AFB Utah (DIAMOND OPS) flying F-16D aircraft.

Out of room again, but a quick PS: the problem with the discone was a dry joint in the PL259 at the antenna end; we now have SatComms back on line. Cheers 'til next month.

Heard on Old Faithful — 11,175kHz

STEEL 81 at 1232z was asked by Thule to "...confirm that you have arrived on the ground at the airport...". A KC-135 of 146/147ARS, Pennsylvania Air National Guard, from (where else with a callsign like STEEL?) Pittsburgh.

RY-529 was calling Andersen and then MAINSAIL for a while from 0759z, then connected with Hickam and QSY to 8968kHz. This should be a C-9B aircraft of VR-59, Dallas NAS Texas — a long way from home.

REACH 328ZZ ICW Incirlik AB, Turkey, at 0626z. Reported as being a C-17 over the Adriatic at position N42°59' E14°27'; destination LWSK Skopje, Macedonia.

JAKAL 66 put through a PP to JAKAL OPS at 0755z; Ops said it was trying to figure 66's current status, as another crew was waiting to take the aircraft "...for a spin..." that night. JAKAL 66 said okay, but the IFF and ground radar were U/S.

This frequency and QSY 11,244kHz; JUNGLE 845 ICW Andersen at 0055z with modem traffic. I still don't have a handle on the JUNGLE callsign but they definitely operate in the Guam area.

SAM 206, endlessly calling MAINSAIL for a signal check from 1123z to no avail. I hope nobody important was aboard!

At 1048z, REACH 8F7Y called MAINSAIL for a while but got no answer. Then at 1054z he was called by YP-977 and asked for his position, which was S05°58' E85°25'. He said he was two hours north-east of Diego Garcia, ETA "FUJ" (Yokota) three hours. YP-977 self-identified as a P-3 inbound to Diego Garcia and stated that they could see 8F7Y; his position was S05°00' E75°00'.

QE-239 called in a PP at 1121z via Yokota to "Duty Office" on a Kadena number, reporting that he had a one hour ETA to homeplate. I list QE___ as a P-3C aircraft belonging to VP-40 at Whidbey Island NAS. Home of PatWing 10 and a whole host of other ASW/Electronic Warfare units, Whidbey has a lot of detachments on-going around the Pacific, so it wouldn't be unusual to find one of their aircraft 'homeplated' at Kadena at any particular time.

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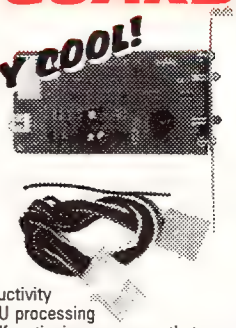

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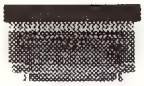

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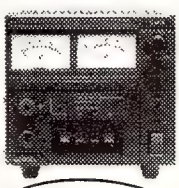

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The World at War

Sound played a major part before radio...

By Brian Kendal

Many of the older generation will remember the summer and autumn of 1940, when the might of the Luftwaffe fell upon Great Britain, first in the day and later during the night. This was known to all of us as the 'Battle of Britain'. What is not generally realised is that this was really the *second* Battle of Britain. The first had taken place 34 years earlier in the First World War.

The first bomb

The first enemy bomb to fall on British soil was on December 24, 1914, when a lone German aircraft dropped a 10kg bomb on Dover. No damage was done, but there was no warning and the aircraft returned to its base unharmed. Such raids continued for several years and, in general, little damage was done. However, it did alert the British public and, more importantly, the authorities to the possibilities of the greater menace — the Zeppelins.

The first Zeppelin raid took place on January 19, 1915, and they continued with increasing ferocity at irregular intervals for the next couple of years. By World War II standards, casualties and damage were not severe, but they caused considerable disquiet among the population. It was realised that there was no way of knowing of their presence until they were crossing the coast, and even then, due to the great height at which many flew, if the weather was overcast, the first knowledge of their arrival was when the bombs actually began to fall.

There was one redeeming factor, however. From the earliest days of the war, the Admiralty had made major efforts to intercept enemy wireless traffic, and for this had constructed a chain of extremely accurate Direction Finding stations along the east coast of the United Kingdom. So accurate were these that, it was claimed some years later, when the signals from the German High Seas Fleet changed by two degrees, they took this as evidence that the enemy fleet was at sea. Acting on this slender piece of information, the Royal Navy left Scapa Flow and the result was the Battle of Jutland. More recent evidence, however, suggests that the real reason for sailing was that Admiralty experts had broken the Kriegsmarine codes, but nevertheless, the DF stations were extremely accurate.

Regular radio reports

However, the German airships do not seem to have even considered any need for radio silence, and regularly used radio to give detailed meteorological and position reports, for navigation and to pass operational orders, all of which were avidly monitored by the Admiralty listening stations which then passed the information to the home defence fighter squadrons. This situation continued more or less towards the end of the war.

However, in 1916 an interesting development took place near Dover. A large flat canvas disc was mounted on the cliffs at Joss Gap. A stethoscope microphone was then mounted at the centre of the disc, and the output coupled to a pair of headphones. The result was a far greater detection range than was possible by the ears alone.

Flushed by this success, when the German Gotha and R-Class bomber aircraft replaced the Zeppelins, two large concrete spherical listening dishes were set up at Joss Gap and at Fan Hole near Dover. These locations were selected as they lay on the bombers' course to London. So successful were they that, on the night of May 19/20, 1918, the raiders were located and seven out of 22 enemy aircraft were destroyed.

Another sound mirror

After the war, in November 1918, another experimental sound mirror was set up at Joss Gap. This was rotatable and also capable of being varied in elevation. This proved to be able to pick up a normal conversation at about 200 yards and, obviously, aircraft at considerably greater distances.

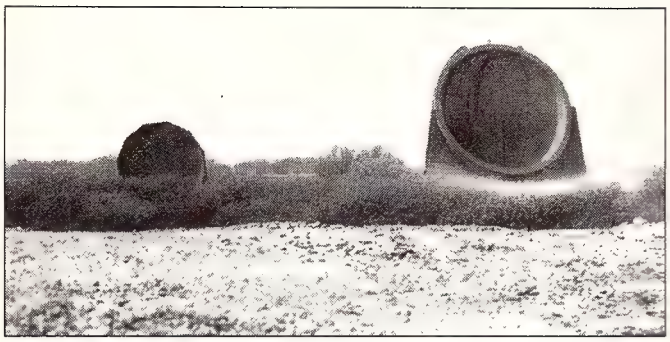
With the help of some rudimentary sound amplification equipment, aircraft were heard up to a distance of ten miles or more out to sea.

On another occasion, ships' fog horns were also picked up at well over ten miles range. Moving the dish on its mountings allowed the bearing to be determined to an accuracy of two or three degrees. By 1919 proposals were being made for a chain of listening stations at one and a half mile intervals along the coast of Kent.

Two years later another development of the sound mirror principle was tried. A large mirror, some 15 feet in diameter and weighing about 15 tons, and mounted in such a way that both elevation and azimuth could be adjusted, was installed at Biggin Hill aerodrome in Kent. When an aircraft approached, the mirror was rotated to face the aircraft and then a ten kilowatt Klaxon in the focus of the bowl was sounded. The pilot leaned out of the cockpit, listened for the sound and used this as an aid to make his approach to the airfield.

Lots of gain!

At a rough estimate, the gain of the bowl would be in the order 25-30dB; that means the effective sound output would be in the order of between 5 and 10 *mega*watts! Compare this with a rock concert at a large stadium, where the sound system will give an output of around 50 kW... The sound output from the bowl was sufficient to cause the cattle in nearby fields to panic. When pointed that way, it could also shatter the glass in the windows on the far side of the airfield. Experiments on the system ceased in 1922, after which the bowl was used for detection experiments for a few years.



Vertical mirrors

Meanwhile, in 1923, a suggestion was made for a series of vertical pointing mirrors in lines across Kent to monitor the progress of enemy aircraft across the county. The output from the microphones was taken via telephone wires to energise galvanometers at a central control point.

32 such mirrors were installed from 1924 onwards, and these were used in defence exercises until the early 1930s. However, these mirrors helped only to determine the location of the enemy aircraft when they were over the UK.

The need for some early warning was needed, so the next series of mirrors were vertical and mounted along the south coast facing in a south-east direction. The observers at the mirrors were again linked by telephone to a central control point - a first stage towards the fighter control system that was to be so successful in 1940. Three kinds of sound mirrors were proposed: a 30 ft bowl in which the main structure was a slab of concrete with the 30 ft bowl indented in one side, and a strip mirror that was two hundred feet long.

In the first two cases the observer stood in front of the mirror, listening through a pair of stethoscope type headphones connected to a sound collector that could be moved about the focus of the bowl.

By this means the hearing could be varied by a few degrees. The strip mirror had a number of observers along its length and, due to the shape of the mirror, the bearing of the incoming sound could be determined over a far greater azimuth range. Furthermore, due to its far greater size, it had greater sensitivity and thus longer range.

These were, therefore, to be used for early warning and the more accurate plotting would then be taken over by the smaller bowls.

A number of these sound mirrors were installed in the late 1920s and early 1930s along the South Coast. Recently I have heard that a further chain was installed on the north-east UK coast and a further strip mirror was planned to be installed in Malta facing towards Sicily.

How successful was this system?

The hope had been that with the large strip mirrors, aircraft would be detected at 25 miles from the coast and course, direction and speed could be determined at 10 miles.

Unfortunately, when put to the test, this range was not realised, for even under good conditions only 10 to 15 miles was obtained, and under more normal conditions, this was frequently reduced to seven. By the time the system was nearing completion in 1935, the most modern bomber speeds were approaching three hundred miles per hour and, at that speed, the sound took half a minute to reach the mirror, in which time the aircraft had approached another two and a half miles.

There were also other problems. In 1935, Air Marshall Sir Hugh Dowding came to inspect the installations near Dungeness. As the staff were preparing for their demonstration, a peculiar clattering and jingling was heard.

The listeners were confused until one bright person had the idea of looking outwards with a pair of binoculars. There, a mile away, was the local milkman on his horse drawn milk float with the cans jangling as he went on his rounds!

In early 1935, however, came the famous Daventry experiment and within a few months, the research team at Orfordness had proved beyond all doubt the advantage of radar. At that point all work on the sound mirrors ceased and they were left — a monument to a great experiment that failed.

An era draws to an end...

There was, however, just one more moment of glory for the strip mirror at Dungeness.

In 1943, there were worries that the radar system may be effectively jammed by the Germans. As a possible back-up, therefore, a team was sent to assess the possibility of sound detection using the most advanced sensitive microphones in front of the strip.

The experiment showed that it was now possible to hear aircraft up to a staggering *60* miles, but nothing more came of it and the mirror was again abandoned. Some of these mirrors still survive, and should you be visiting the UK and wish to see some of these concrete white elephants, take a drive down to Greatstone near Dungeness where, half a mile inland, a slab, a bowl and the great 200ft strip mirrors remain.

Unfortunately, they are now in a very sad condition and it seems doubtful that they will survive for many more years. It seems to me that it is a great pity that they have not been taken under the wing of some preservation group which could restore and preserve these examples of a unique detection system.

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11m DX International

By Jack Haden, VK2GJH...
PO Box 299, Ryde, NSW 2112

It's been a very poor year as far as propagation is concerned with many operators giving up DXing altogether! Even the big DX clubs are feeling the pinch with few new members joining and many established members declining to renew their annual subs.

Let's hope that 1998 will be a better one for the DX community, not only on 11 metres but also the amateur and shortwave bands as well as they too have been suffering the down side of very poor to non-existent DX conditions during 1997. Retailers of CB equipment have also felt the pinch with equipment sales down and thus they too will be hoping 1998 will be a better year.

Members of Alfa Tango Australia will also be looking forward to a positive year after the controversy and unanswered questions following the resignation of Australian co-ordinator Nick 43-AT-026 during 1997. A pity due to legal reasons that the juicy bits of this saga couldn't be published in these pages, but that's life!

Propagation on the up?

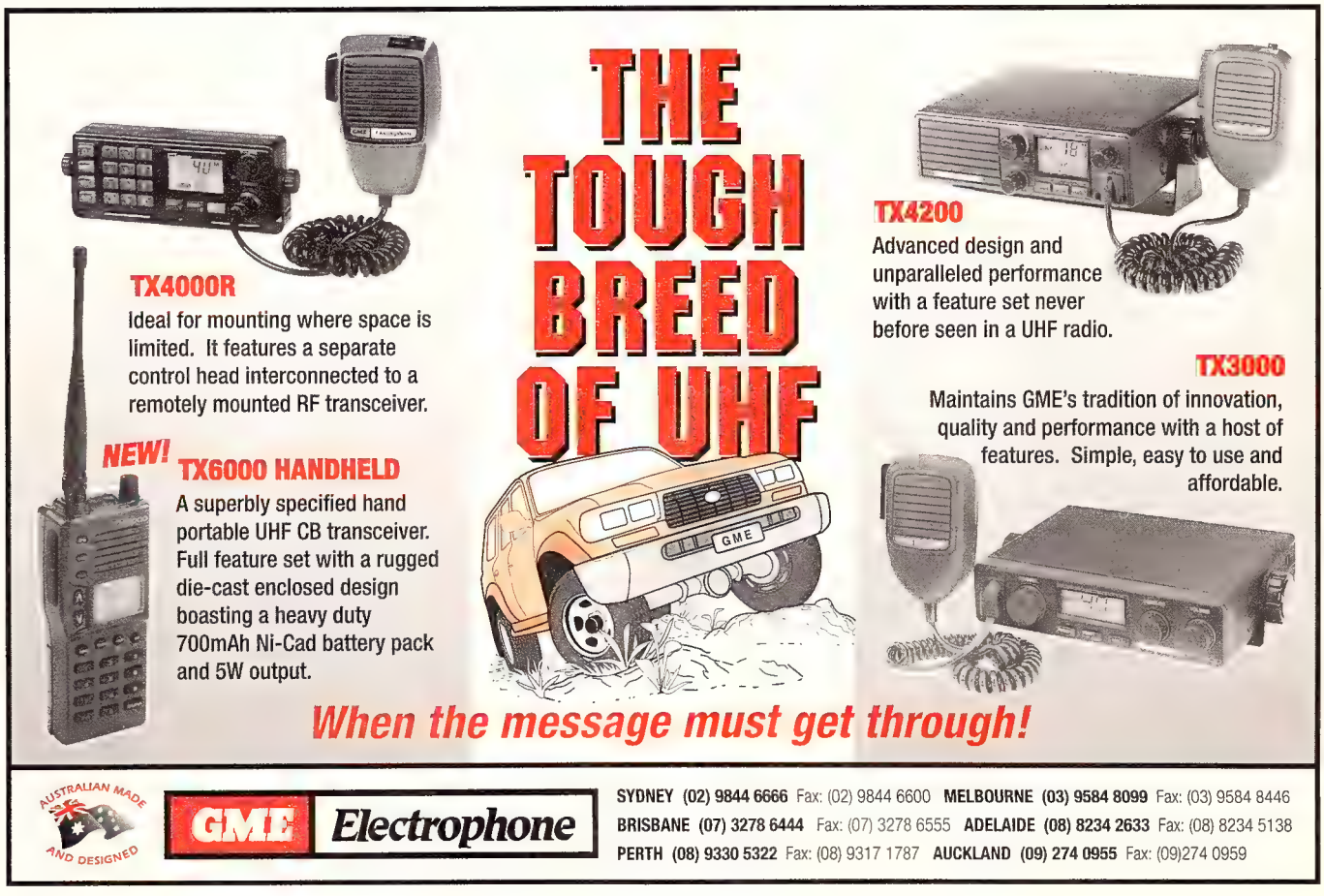
As I mentioned in the previous issue of this column, 11 metre band propagation is getting better by the week as the solar flux peaked 119.4 back on September 8. It appears that we have now passed the minimum and, with the figures slowly rising, things are really on the move as we approach the next cycle. Enhanced conditions during the September equinox on the 23rd showed all was not lost on 11 metres after all.

The last time we attained anything near the September 8 figures was back on January 27, 1994, so it's been quite a while since the figures and propagation have picked up. A good time to look for really good propagation is around the December solstice, especially in the N/S and E/W directions. Just remember that 'K' indices below the figure three mean stable conditions and above three band conditions can and do become erratic.

It was most interesting to read in the August edition of *Amateur Radio* published by the Wireless Institute of Australia, that the NSW president of the WIA, Mr Geoff McGrorey-Clark VK2EO, is an ex-CBer and he was an avid 27MHz DXer at that. Starting out on CB during 1978, he amassed some 150 DXCC countries to his credit before his interest in amateur radio commenced in 1986. Geoff obtained his full call in 1991, so it just goes to show how ex-CBers are making positive contributions to amateur radio and not being ashamed to admit their CB radio past. Not so long back it was considered shameful to admit your CB radio past on the amateur bands but times do change and for the better at that.

Radio callsign cult...

Another elite society is those who must have a two-letter suffix full callsign on the amateur bands. I've never been able to comprehend this cult-style frenzy and fanaticism about a two-letter suffix on your callsign. Does a two-letter suffix earn you more respect on the amateur bands? Maybe they like other operators to think they are 'old timers' just because they have a two-letter suffix... I can honestly dismiss this theory as I have heard some utter dills, lids and dorks on air equipped with two-letter suffixes.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Maybe the big DXpeditions work the two letter mob first as a sign of respect and seniority — a two-letter gold pass to the world of priority DX check-ins? Access to transit lane facilities in a pile-up? Maybe an instant 'gold key' access to the exclusive old timers net? A instant five by nine plus report from the rare DX stations? One less letter to send on CW?

Three or so years back I heard one three letter suffix tell his mate on 40 metres that when VK4 so-and-so died he would be getting his two-letter suffix — and that the time was very near as VK4 so-and-so was in hospital, critically ill! I could hear the glee in this chap's voice in anticipation of VK4 so-and-so croaking it, so he would soon get the much-prized two-letter suffix!

My, what a twisted lot we have on amateur radio these days... which reminds me that, a couple of years back, I heard a VK2 three letter suffix telling his mate on 20 metres that he had a contact in the then SMA who was going to ring him as soon as a two-letter suffix became available!

Fortunately, not all amateurs belong to this 'elite' crazy faction. Some do get their two-letter suffixes from a family member or very close friend who has passed on and thus the callsign is 'handed down'. Others are just lucky enough to get hold of a two-letter suffix as it's available for re-issue after they have obtained their full call privileges. So what's all this fuss and frenzy that preoccupies some radio amateurs to go to great lengths in obtaining a two-letter suffix on their callsigns? As Nino Culotta once penned "...they're a weird mob..."!

A similar situation has occurred within some 11 metre band clubs, where a low two-numeral suffix instantly elevates you above the others — instant respect and credibility for all to envy? Why be 43-AA-323 when you could be 43-AA-023 in a big club? Alfa Tango gave out many low number suffixes to members holding positions of responsibility in the group as did other DX groups — again, as with amateur radio, does it afford you any extra status or elite privileges? Are you any better than the next DXer?

American DX...

In recent weeks there's been quite a lot of American stations on the band and thus those who are chasing the WAS (Worked All States) award will delight from this. As most of you will know, to successfully complete the award criteria you must have one card each from the 47 states to qualify. Just the other weekend I heard the following states: Alaska, Arizona, California, Florida, Georgia, Hawaii, Mississippi, Nevada, New Mexico, Ohio, Texas, Utah and Washington.

DXpedition news, views and gossip...

Those who chase contacts on exotic modes should look no further than the 26-AT/SSTV and 26-AT/RTTY operations which are due to close on December 31 and can be found on the RTTY/SSTV channel. Those into FM mode contacts will welcome the European propagation back as there are many European DXers who chase overseas contacts on this mode.

Svalbard has been very active signing as 171-AT/DX and many in Europe have secured this one; the station closes down at the end of June 1998 so let's hope conditions permit those in the Pacific a chance to put this one in the logs. The QSL route is PO Box 35, Gdansk 37 80325, Poland. Beware of a slim also active with the callsign 171-CS/DX; reports from Europe indicate this station is located in continental Europe and not Svalbard.

Eastern Europe has a number of semi-rare DX activations on air with **Bulgaria** as 178-IR/0 operated by Dany the 178-IR-101. QSL via PO Box 812, Sofia 1000, Bulgaria. **Estonia** is still about the traps as 304-SD/0 and will remain on air until December 31. QSL to PO Box 615, Castellon 12080, Spain. **Albania** is one many still need on 11 metres so look for 251-DT/0 active until December 31 with cards going to same address as 24-DT/0 mentioned earlier. **Monaco** and **Andorra** are both active as 107-KP/DX and 51-KP/DX respectively until December 31. QSL both operations via PO Box 1131, Palermo 90146, Italy. **Gabon** is quite active with 215-AT-102 doing the European circuit... a pity propagation doesn't extend this far! QSL direct to PO Box 141, Royan Cedex 17208, France. **Morocco** is one many still need in the Pacific. Pascal is very active as 76-AT-243 and is reported keen to work in to Asia and the Pacific region. QSL direct to PO Box 7711, Casablanca 20202, Morocco. No callsigns or radio club stamps on the envelope please!

Although it's the December edition, the January issue actually comes out on Christmas Eve, so we'll save up our seasonal greetings until then. 73 and good DXing de Jack.

Jack Haden checks out the 27MHz DX

IOTA & SES news...

The Europeans are right in to the IOTA program, and as propagation gradually improves so too will the increase in IOTA DXpeditions. It's a pity that IOTA is still a bit slow to catch on here in the Pacific, but I am sure things may change when we experience better DX conditions on 11 metres.

Don't forget that there are many IOTA islands around Australia, and some are quite easy to work on 27MHz. Keep an ear open for the following: ***Norfolk Island, Lord Howe Island, Fraser Island, Lamb Island, Green Island, Thursday Island, Groote Eylandt, Cocos Keeling Island, Kangaroo Island, King Island*** *and* ***Philip Island*** *just to mention a few.*

The Greek islands are always most popular on the IOTA circuit and the following islands have been activated with some still active as you read this: ***Mykonos Island*** *as 18-SG/MI,* ***Andros Island*** *as 18-SG/AI,* ***Alkionides Island*** *as 18-SG/AL0,* ***Tinos Island*** *as 18-SG/TI,* ***Sporades Island*** *as 18-SG/SP0 and* ***Salamis Island*** *as 18-GI/EU-075. Cards for the SG operations go via PO Box 10, Athens 15303, Greece. The GI operation via PO Box 47534, Athens 13101, Greece.*

Two Italian IOTA islands will be on air until December 31, they being ***Grado Island*** *as 1-SD-GI/EU-130 and* ***Schiusa Island*** *signing as 1-SD-SI/EU-130. QSL both operations via PO Box 1, Percoto 33050, Italy. Grado Island has also been reported active by another group using the callsign 1-CS/GI in recent weeks. QSL to PO Box 147, Monfalcone 34074, Italy. The same group has also been heard from* ***Lido Island*** *signing as 1-CS/LI. QSL same route.*

Sporadic activity has been logged from some Croatian islands with the following being logged in Europe: ***Dugi Island*** *as 328-CS/KI,* ***Cres Island*** *as 328-AT/EU-136,* ***Krk Island*** *as 328-AT/EU-136, while another station, signing as 328-CS/KI, has also been heard operating from Krk Island in addition to the AT operation.*

King Island *off the Ivory Coast has been reported very active on the band signing as 84-AT-107/AF-80 in recent weeks with many in Europe working it. No one is sure how long this station will remain on air. QSL via PO Box 6, St Junien 87201, France.*

Muhu Island *off the coast of Estonia has been quite active with Vello operating as 304-AT-102/MI and again many in Europe have logged it. Vello was previously active from* ***Aegina Island*** *before this current operation. QSL via PO Box 2259, Tallin EE-0035, Estonia. No callsigns or radio club stamps on the envelope please!*

Asia-Pacific DX news report...

Some really big signals have been coming out of South East Asia on 11 metres. Old favourites such as ***Japan, Taiwan,*** *the* ***Philippines, Indonesia*** *and* ***South Korea*** *have been most dominant in recent weeks.* ***Thailand, Singapore*** *and* ***West Malaysia*** *have also been heard about the traps, but strangely enough* ***Hong Kong*** *has been conspicuous by its absence on 27MHz since the hand-over to the People's Republic of China back in July.*

Sporadic activity was reported from the ***Spratly Islands*** *(241) during October too, which is quite interesting due to the political status of this small group of islands.*

Likewise, some good Pacific island signals have been about too with the ***Marshall Islands, Western Kiribati, Eastern Kiribati, Hawaii, Guam, Nauru, Federated States of Micronesia, Papua New Guinea, Solomon Islands, Vanuatu, Norfolk Island, American Samoa, Tuvalu*** *and the* ***Cook Islands*** *having been worked on the east coast of Australia in recent weeks.*

The odd big signal has been heard from the ***Russian Federation*** *with most 302 prefixes being on Sakhalin Island or around the Vladivostok area. Anatoli the 302-RA-230 has been most constant on the band, and was logged in Sydney at 2255z with a good five by six report.*

Burma *or, as some know it,* ***Myanmar*** *had been active as 237-CS/0 earlier in the year and was scheduled for another activation starting in October by Riccardo, who will sign as PR-01 or 237-CS/0. It's still not clear which callsign he will use. Riccardo will issue the first 20 contacts with QSL cards direct from Myanmar with the rest being dealt with by his QSL manager in Italy.*

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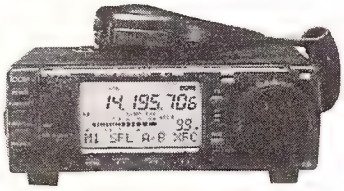

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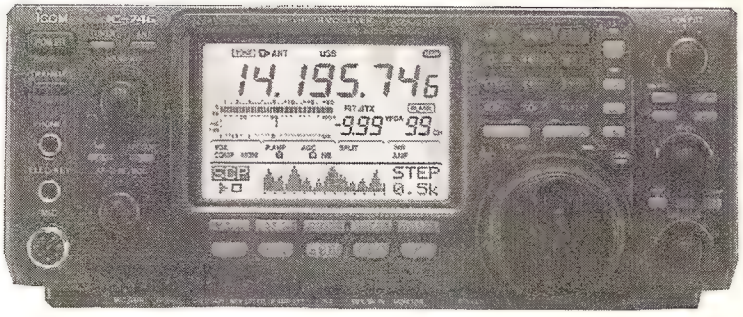

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The 'Stringers'

All about freelance TV news crews and their big use of scanners and other communications tools...

By Bob Bell, VK2UTG

You may not have had much or anything to do with the people who report for, shoot, assemble, and broadcast our TV news broadcasts. Then again, you may have. If you have, you would realise that as well as the regularly-paid permanent ENG (Electronic News Gathering) camera employees of television stations, there is also an army of freelancers, who are, as often as not, first on the scene, and capture the best images of the newsworthy event.

The TV stations can't afford to have 15 cameramen idly sitting around on a night shift, just waiting for a story to break, or cruising in a vehicle. It's all dollars to them — dollars they don't want to spend, and dollars they don't *have* to spend. So they actively encourage a system of freelancers who operate quite independently of the stations, who can contact them if they have a newsworthy good quality tape to sell.

Some of the 'stringers', as the freelance cameramen are known, set themselves up very professionally, with top quality Betacams, worth in excess of $60,000 each. Others opt for the cheaper Super-VHS format, knowing that these days, the quality from such cameras is virtually broadcast quality anyway. At worst, the station will superimpose a title line saying 'Amateur Video'. Frequently, however, it is not necessary for the stations to use such an overlay, because we are mostly not talking of your average Joe Citizen with a camera here; we are talking of freelance cameramen who have decided to go it alone — people who know their business.

The 'business' of becoming a stringer demands a few concessions to technology, right from the start. They are:
1. The purchase of a quality camera like Betacam or Super-VHS format at least;
2. Purchase of a hand-held or vehicular cellular mobile telephone;
3. Acquisition of reliable mobile or portable scanners for home and vehicle, with accompanying external antennas. The scanners must be carefully programmed to include all local law enforcement, fire, ambulance, rescue and aviation channels, and other important frequencies.

Stringers almost invariably become 'scannerheads' due to the nature of their very specialised work. And it is necessary for them to have their camera and communications equipment with them at all times when they are away from their home base in their vehicles. Some stringers become so trusted by the commercial television station they most regularly work for that they are permitted to purchase a radio transceiver and program in the television station radio frequencies for the News Department. That way, they can be called or selcalled, and then referred to the digital mobile telephone to discuss the wheres and whys of shooting the story for the station.

An example: an informant for the TV station who works in the Fire Brigade rings the TV news Chief-of-Staff and gives him a good story that is just breaking, and that no one else yet knows about. The Chief-of-Staff has only three roving news crews out in vehicles at the time, and he knows that the closest car crew to the story just phoned in is at least 30 minutes drive away. So what does he do?

He gets on the radio and calls a stringer cameraman who lives three minutes away from the incident breaking out, and is monitoring the station's radio network. The only conversation on the frequency from News Desk to Stringer is: "News to Paul. Mate, give me a call on the phone urgently." The stringer complies, and is asked his exact location. When he confirms he is near to the incident the Chief-of-Staff wishes to cover quickly, he is fed the details, while he starts to head for the story location.

The story turns out to be an industrial accident and rescue, which the Fire Brigade has for some time pretty much kept to itself. Only 10 minutes down the track does it make the Police and Ambulance services aware of its existence. You see, petty jealousies in the rescue game are rife. Rescues usually attract media, and media attention given to rescues is all positive public relations. The services try to hog the limelight, as pathetic as this may seem.

This sort of situation happens daily, sometimes on multiple occasions, and involves most television stations. There is also another side to the stringer story. These are the stories that the stringers themselves happen upon by astute monitoring of the local Police, Fire, Ambulance, Bushfire Brigade, Local Government, Corrective (Prisons) Services, and other significant frequencies on their scanners.

Let's look at a stringer we shall refer to as 'Matt'. 'Matt' is not his real name. He wants to help us compile our profile on stringers, as he wants us to get the story about his profession right. But he points out that it's best not to advertise who you are on a widespread basis. Stringers tend to make more enemies and feel the vengeance of the public more than legitimate TV crews in marked TV station vehicles. It's not uncommon for stringers to be assaulted by their quarry, or their cameras damaged. A recent incident involving a stringer shooting vision outside a suburban Arabic Mosque in a western Sydney suburb resulted in an assault and a camera flung out of the stringer's hands and onto the roadway by irate members of the Mosque. They felt it their right to prevent any negative publicity and took the law into their own hands. The result: a damaged lens hood and scratches around the right side of the Betacam being used. Lucky it wasn't any worse...

....☞

Questions of a Stringer...

Q: How important are scanners to stringers?
A: I use them all the time, says Matt. There's one going in both the upstairs and the downstairs of my home all the time. I work with another guy out of my downstairs garage, which doubles as an office. I have three Bearcat UBC-760XLTs in the office, and another one of them upstairs next to my bed. In the vehicle, a Pajero four-wheel-drive, I have two Bearcat 760s mounted one above the other on a special cradle I made up, connected to external antennas. I have a cellular telephone in the Pajero, along with a UHF two-way hand-held which I use to communicate with the TV station I mostly work for. At home, I have a UHF base radio, also with the TV news frequency therein.

Q: Do you get real value from the scanners?
A: I certainly do. Many times, I can respond to an incident even before the cops arrive, and shoot them getting there. In the case of people who have been killed, it's pretty important that I get a body shot, even if it isn't able to be used on air due to any element of poor taste. The Chiefs-of-Staff are much more prepared to buy your footage with the body in it. If you miss the body, you don't really have a story.

Q: How often do you sell a story? Do you earn money every day?
A: Yes, I frequently sell up to two or three stories a day, and I have a scale of fees I use to base my invoice claims on. I frequently make in excess of $1,000 a day, and sometimes up to twice that amount. If I work a seven day week, it's possible for me to gross $6,000 to $7,000. On a particularly bad week, I might only earn a few hundred, but I squirrel nuts away for a rainy day. You have to in this game...

Q: What sort of stories do you mostly cover?
A: *All* of them, really. It's a Johnny-on-the-spot thing. The luck of the draw, and whether you are good at listening to the scanners. You see, you may just overhear a few words from a Police call, and not pick up the address. They may not say it again. Then you have to use all your skill, knowledge, and gut feeling for the job to find what and where the story is all about. You can't be on every frequency in your scanner all at one moment. You're going to miss something even with lightning-fast radios employing turbo scan capability. But if you are good at your job, you will come up with the answers quickly!

Q: What are examples of some of the jobs you have covered recently?
A: A large brawl at St Helens Park in Sydney, with 60 youths armed with guns and knives, a handicapped person falling from into a lake and drowning after he stepped off a bus conveying a group of handicapped people for a rest break, a major gas leak in Revesby, a Boeing 737 (VH-TAU) with major undercarriage problems at Sydney Airport, a suicide on the rail tracks at Flemington... do you want me to go on?

Q: Yes, please!
A: Some colour or human-interest stories as well come up, like a kid with its little hand caught down a bathroom plughole, unable to be freed, in North Richmond. I heard it on the Ambulance frequencies, and the TV stations didn't even catch a whiff of it. It earned me a couple of hundred bucks, because it is the sort of item the talking heads of the news broadcasts can get all clucky over and try to pretend they're human and prove they care about the world.

Q: Any more stories you want to tell us about, Matt?
A: Oh yeah... 200 litres of volatile hydrochloric acid spilled from a truck in south-west Sydney, and PolAir 3, the Police helicopter heading for the town of Muswellbrook to assist in a drug plantation raid with the Drug Enforcement Agency. I heard the cops talking on 131.6 saying go to Channel 64 UHF on the Police band. So I went and monitored there, expecting DVP encryption. It was all in the clear. They stuffed up. I learned about the impending raid. I started driving north immediately, ringing the TV station along the way. Their nearest contact was in Tamworth, and I arrived in town before the whole thing went down. They stayed overnight near the town of Willow Tree, and re-grouped in the early morning. When the chopper flew in low over Muswellbrook, I was already there and shot the lot. I got a real heap of money for that one!

Most of these guys are pretty resourceful. Some of them, however... well, we reckon they're just plumb crazy!

Photo: VK3CE

Q: You've mentioned DVP radio used by the cops. How do you normally get around that?
A: Well, normally, if they know what they're doing, you can't. But some of the Police using the radios don't know much about radio, per se, and accidentally leave their set in clear speech mode. As long as it's coded up with the code they're using, they can still hear and understand the DVP signals coming from the other units talking to them. To them, everything sounds normal.

To me, I hear them in the clear, and the other side in DVP. But frequently, the side in the clear thinks he's secure, and blabs his head off, giving addresses, names, locations, all sorts of things. I'm cooking with gas! I can't tell you how many times I have done this! Once, a mate of mine used this technique and 'dogged' (followed) a Federal Cops drug unit all the way down from the Gold Coast to Sydney. Once the coppers are out in the scrub, they think they're safe from prying ears. They relax, switch to clear mode, and they're also talking on 'local' or simplex. Their radio bases are left well behind in the cities. They think because they are in the scrub, no one is monitoring. How wrong they are! There'll always be someone like me there!

Q: You've whetted our appetite with these tales of getting great stories. Are there any more you can tell us about?
A: Yeah... I got a great scoop if you like... for want of a better word, at the national Australia Bank, Pacific Highway Lindfield. I filmed the cops chasing two armed offenders away from the bank, with the crooks escaping on a motor bike, firing shots at the Police. And an explosive device in a building in suburban Auburn. And then another of those human-interest stories. A baby stuck in a high-chair, and no-one could get him out. A highly unusual story, but once again it sold really easily, and made me a buck.

Q: How do the cops perceive you?
A: Mostly they leave me alone, and let me do my job. But just occasionally I run into an arsehole amongst them, who won't let me go anywhere or shoot anything of interest. But that situation is in the minority of cases. Most of my problems seem to come from cops straight out of the Academy. I believe they run a lecture telling them how to deal with us, and how not to trust us. Hell, I've given cops my tapes on occasions, to use as evidence. A couple of times my tapes have saved coppers' arses, when they've been wrongly accused of things, and my tapes showed what they *really* did. Yep, I don't really have a problem with the cops, or the Firees or Ambos, for that matter.

Q: How many hours a day would you monitor the scanners?
A: In reality, about 20. Even when I'm asleep, or dozing, I have the scanners on. I've woken from a deep sleep when I hear the 'double beeper' jobs go over the Police radio indicating that there's something big on. *('Double beeper' jobs refer to the two tones broadcast by VKG in Sydney prior to high priority incidents being broadcast over Police radio. Melbourne's VKC has a similar thing available, but I've only ever heard it a couple of times.)* Scanners to the stringer are an absolute necessity. Monitoring the Police calls is the top priority, but lots of other frequencies are important too. You have to keep a good handle on aviation company channels, and air traffic control, and the local general aviation airports, just in case of a small mention being made of something which may blow out into a full-scale air emergency.

Q: You said earlier you operate with another person helping you. How does that work?
A: Well, I need to concentrate on the scanners, the phone, the job, the tapes, the camera. If you work by yourself, you have to find the location in the street directory if you don't know it, and drive there too. It's easier if you have a driver. So I pay a guy $600 a week just to drive for me. It works out fine. I'm happy working from home, because I have no real overheads. It's all profit. I pay my share of income tax, but I don't pay out thousands a month on some premises. In the USA, some stringer groups have their own light helicopters to film Police car chases and stuff like that. I'm amazed! I just don't know how they do it, how they pay for the machine. Out here, Robinson helicopters, probably the lightest, cheapest machines to operate by the hour cost about $350 to $400 per hour. We couldn't afford to operate the choppers like that. Somehow the Yanks can. It's possibly the much lower operating costs per hour there relating to servicing costs, fuel etc. It's interesting, the two countries, and how stringing there is so different to here. Over in Los Angeles, you don't have marked TV vehicles for the stations. If they're marked, the crews are targets for street gangs. And the stringers get in, shoot their footage, and get out, before the gangs get them. At least it's not that bad here yet...

Q: What are the attitudes of the News Chiefs-of-Staff for the TV stations to using stringers?
A: Well, they consider us to be more likely to be Johnny-on-the-spot. You'll find stringers scattered all over the metro area. You'll have a guy who works south-west and west like me, and another who only works northern beaches as a rule. Then another who only works the city and eastern suburbs. The stations will have lists of stringers in each geographic area they know they can rely on. It's a highly sophisticated network that's been carefully cultivated by the TV news guys over the years, and it's a system which works well.

Q: Do you ever feel like paparazzi?
A: No, I am just doing a job. People expect that if something happens, and they hear about it driving home from work on the AM or FM commercial radio stations, that once home, they'll catch it all on the 6 o'clock news bulletin on TV. I make it happens for them. I am performing a service. If people didn't want news, I'd be out of a job. The only thing that amazes me is the short bulletins here. In the USA, bulletins are longer, and the hard news, as opposed to sports, is much more lengthy and detailed. Here, you get 12 minutes of hard news, a few advertisements, then 12 minutes of sports. In the USA, you'll get 20 minutes of news, five of sports, and five of advertisements.

Q: Do you do any other work?
A: No, my work for the TV stations, as a stringer, is my primary employment. I may do a few bits and pieces for a few extra bucks occasionally, but stringing is my life. And as for my equipment... of my cameras, of which I have several, two are Betacams, and there's a Super-VHS backup unit, plus my scanners and so on. I guess you could say my electronic toys are my life.

Q: What's your favourite communications toy?
A: My Optoelectronics Scout. It has found me the frequencies of the State Protection Group within two minutes of arriving at a siege, when they've been operating out of band on SacPav channels. It has saved my butt so many times and found the channels I need to monitor at a situation.

Q: And your favourite scanner?
A: The Uniden Bearcat UBC760XLTs are great to work with in the car, but I've recently purchased an AOR AR-8000, which I now have tied up to my Optoelectronics Scout. The bloody thing programs my radio as it hits frequencies! What more could you ask for? Once upon a time in this game, you had to lie, cheat, beg, borrow and steal to get the frequencies being used by various agencies. Now, we get it all on a plate, delivered to us, courtesy of approaching-2000 technology!

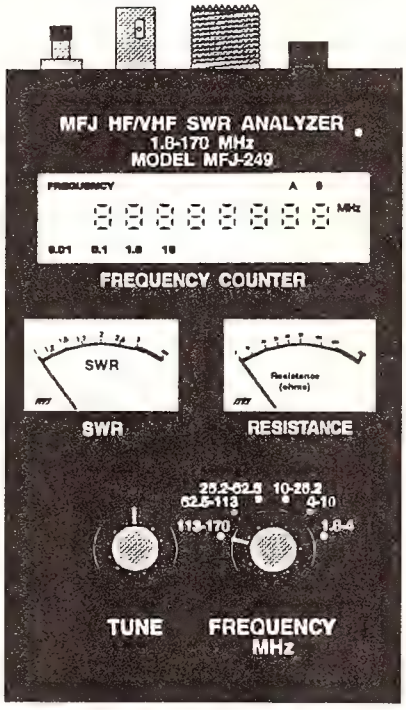
MFJ-259 SWR Analyser

An almost indispensable station accessory...

By Neil Duncan, VK3ND

MFJ spreads its American Eagle wings wide when it comes to the size of its product range — and the geography of its customer base. The extent of its antenna testing and measuring line in particular is becoming quite daunting. We have looked at several products from this particular family in the past and note that vast numbers of them have found happy homes in amateur as well as professional environments. This month we take a quick look at another of them...

This most simple but maybe most famous of the MFJ devices comes in a lightweight hand-held box. It consists of an RF oscillator tied to a calibrated dial or a frequency counter. The oscillator feeds opposite corners of a Wheatstone bridge, one leg of which is a 50 ohm resistor while another is the antenna. By measuring the bridge imbalance with a suitably calibrated metering device, you magically arrive at an SWR measuring instrument — and one which is completely independent of the gear in your radio shack.



The MFJ-207, MFJ-208, MFJ-209, MFJ-217, MFJ-218 and the MFJ-219 all carry this design but do not have a built-in frequency counter. They cost around the $200 mark and allow for frequency coverage via this concept in ranges right up to 450 MHz. The inherent inaccuracy of the 'read the scale' frequency display is not often a problem especially where a receiver is available to pick up the micro power emanating from these instruments. For some, it is a darn nuisance at any price.

With the most successful MFJ-249, the designers added a frequency counter to the full version of the unit (with resolution down to 0.1 Hz!) and at about $500, this device not only fulfils the target purpose with respect to true SWR measuring elegance, but makes for a calibrated source of RF and a fully-optioned frequency counter, all in one highly portable box. These little extras certainly help justify the extra cost.

The MFJ-259 SWR Analyser is primarily the same as the MFJ-249, being a ver-

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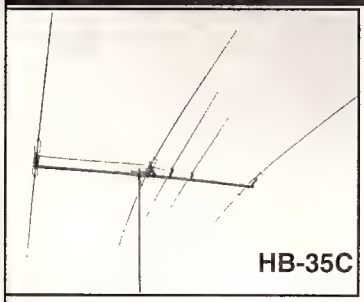

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TE-56 3-ele beam on 14-21-28MHz, 2-ele on 10-18-25MHz..... $1080

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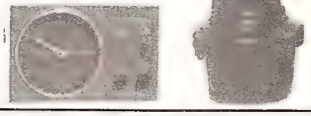

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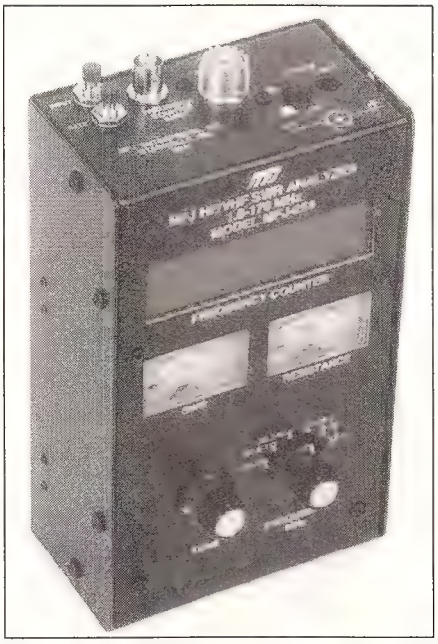
satile test instrument for analysing the SWR of any 50 ohm RF system on frequencies between 1.8 and 170 MHz and providing the frequency display just described. In addition, the MFJ-259 sports a 'resistance meter', which offers you a reading of the purely resistive component of the load connected to the antenna jack. The switched frequency ranges of the device are 1.8 to 4, 4 to 10, 10 to 26.2, 26.2 to 62.5, 62.5 to 113, and 113 to 170 MHz.

Using the MFJ-259 is just a snap. Connect the antenna and turn the TUNE dial until you see a dip. Read off the frequency and the SWR and note the resistance of the load and you are done. There is a little catch associated with the resistance reading though. The resistance reading is just that — it is only accurate when the SWR is lowest and thus the reactive component is at a minimum. Ignore the reading is the SWR is at all appreciable.

The manual suggests that with the device, you can have a go tuning up the following: antennas, antenna tuners, amplifiers, coaxial transmission lines, balanced transmission lines, matching or tuning stubs, traps, tuned circuits, small capacitors, RF chokes and inductors, transmitters and oscillators, bandwidth, efficiency, SWR, frequency, input and output networks, velocity factor, losses, resonance, impedance, resonant frequency, bandwidth, value, self-resonance, series resonance and even component values. Phew! Now, MFJ is not just talk. Many, many pages in the homely but most effective manual, guide you through how all these clever things can be done with diagrams, equations and simple but effective tips.

The manual points out a lot of little



interesting truths too: a common misconception is that 25 ohms of reactance and 25 ohms of resistance in a load will give a 1:1 SWR on a 50 ohm system. This is absolutely untrue — the actual SWR in this condition will be measured as 2.6:1. Another is that changing your feedline length will change the SWR. If the impedance of a feedline is 50 ohms and the load impedance is 25 ohms the SWR will remain 2:1 as the feedline length changes. — the feedline does not have to be any particular length unless the line losses are high in which case you have troubles. If changing feedline length changes the SWR readings one or more of the following must be true: the feedline is not 50 ohms, the bridge is not set to measure 50 ohms, the line losses are significant, or the feedline is acting like part of the antenna system and radiating RF.

Anyway, we commend MFJ on adding this fresh second dimension to a member of its Analyser lineup and once again, we wonder how we did things without it in the good old days. The MFJ-259 can be used with either an external low voltage supply or with internal AA battery packs. It carries a price tag of $519 from Daycom and is somewhat unique on the market. There ain't too many devices which measure SWR, frequency and feedline resistance all in one go.

Radio & Communications thanks **Daycom** for the loan of the review unit.

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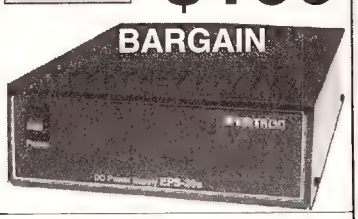

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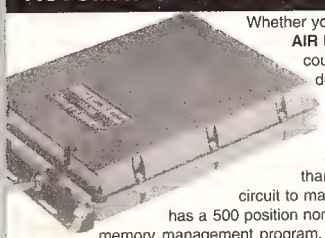

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Hidden antennas

By Richard Q Marris

If you lack antenna space, or live in a 'no antennas here' zone, then why not try a Clandestine antenna?

If you look around your area you will see rooftops bristling with TV and FM antennas plus the odd satellite dish; also telephone poles and wires, electricity poles and wires (or even huge ugly pylons) and other manifestations of our modern high-tech world. But if you erect a base station transmitting antenna on a tall mast or tower, or maybe on the rooftop, then some busybody will come along and tell you that you do not have planning permission 'so take it down again'. Apply for planning permission and it will probably be refused as 'it is unsightly' or some other such reason. It's a funny old world — that is funny peculiar and not funny ha ha!

Or perhaps you live in an apartment block (large or small), with a 'no antennas here' agreement; though you can bet your life that there will be TV antennas and sundry other telephone and electricity cables festooning the establishment.

Finally if, in the immediate neighbourhood, a TV picture gives a few flickers, then it is you who will be blamed if it is known that you have a transmitter — being away from home at the time is no excuse, as logic does not seem to prevail. Bad news travels fast, and it will become increasingly difficult to prove your innocence.

The options

So you seem to have two options: 1) to pack up and sell the TX/RX/antenna gear or 2) just get plain crafty, keep your own counsel, become devious in your ways; and 'play' with hidden or clandestine antennas. Hidden antennas can become an absorbing obsession, as I found out when, through the 1970s, I was living and working, and also operating, an amateur transmitting station G2BZQ/WØ in the USA.

I lived in a very large apartment complex where the 'no antennas' syndrome was rigidly applied. It took me exactly seven days from moving in to get 'on the air' on the 28 and 21MHz amateur bands and work DX. It took a while longer to cover all the bands from 28 to 3.5MHz.

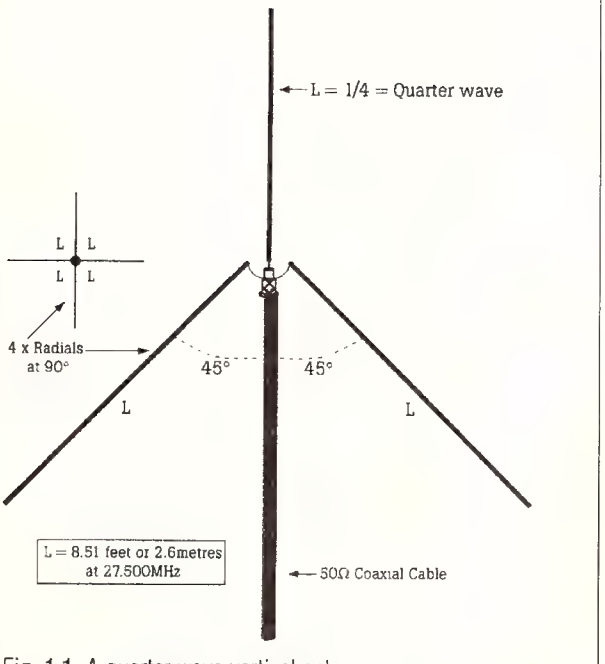

Fig. 1.1. A quarter wave vertical antenna

It took me a further six months to discover (accidentally) that there was another resident enthusiast operating both CB and amateur stations from his apartment, unknown to his neighbours. Another chap operated CB from his apartment on the ground floor. He had a large Chevy truck that bristled with CB antenna devices. Everyone had become used to seeing it, and accepted it as a part of the scenery. One day while admiring his mobile antenna close up, I noticed a well-hidden, grubby looking length of thin coaxial feedline running from his apartment to his car — he was using his mobile antenna with his home transmitter!

So maybe those of you who can park your antennas-fitted car just outside, might run a short hidden piece of coaxial indoors from the car antenna. None of your neighbours will realise that you have a station indoors feeding into your familiar mobile antenna — so there's an idea worth trying. Remember to dirty the coaxial feedline with mud!

Facts and figures

If an outdoor home station antenna is permissible, then it is just a question of buying a commercial antenna. Or why not design and make your own? To many it is an added interest, and satisfaction, to their hobby. If outdoor antennas are out, for reasons previously stated, then the options are erecting an antenna indoors in the loft or spare bedroom, a hidden outdoor antenna; disguising an outdoor antenna; or just plain 'illusion'.

The first thing I learned about antennas, as a schoolboy, was that the most important formula is for the half-wave antenna length.

A half wave in free space is 492/f(MHz) = feet (where f is the frequency) or 150/f(MHz) = metres. However, due to the 'end effect'; variations in height, and siting, the practical formula generally used is: 468/f (MHz) = feet (feet = 0.3048m, so try 142.64 metres.)

It is from this basic formula that all basic antenna designs originate, eg a half wave divided in two is a quarter wave and a half wave multiplied by two is a full wave and so on.

Useful antenna designs

For the purpose of this article, three simple basic antenna designs are presented. You should check the current regulations on the band you intend to operate on before starting construction as different frequencies have different regulations. Clandestine activities will, of course, also apply to more elaborate designs such as bottom, middle and top loading, whether home-brew or commercial in origin.

The drawing in **Figure 1.1** opposite shows the conventional quarter-wave monopole vertical antenna. It consists of a quarter-wave vertical member and four quarter wave radials, set at 45° to match 50Ω impedance coaxial feedline. If they were horizontal the impedance would he around 30Ω, and a mismatch.

The four radials can be made of any metal rod/tube or wire. Copper is the best. A quarter-inch diameter radial will have a wider bandwidth than one made of wire. When pruning and adjusting such antennas, a field strength meter is essential, as achieving maximum radiated output is the order of the day, with the SWR being as low as possible.

The antenna in **Figure 1.2** at right shows a more convenient vertical antenna, as the radials are horizontal. To achieve a 50Ω impedance match, the driven vertical member length is increased to 0.28 wavelength, which also introduces reactance, which is 'tuned out' with series variable capacitor C being adjusted to minimum SWR and maximum radiated signal on the field strength meter.

The variable capacitor should be a good quality small ceramic type, mounted in a small box to eliminate dampness and dust on the plates. Again, rod, tube or wire can be used. Wire gives a slightly narrower

Clandestine: (Chambers Dictionary) "Concealed or hidden; private; sly and secret."

bandwidth. Also the radials can be reduced to two, if absolutely necessary, giving a somewhat higher SWR and more critical pruning adjustments.

Looking at **Figure 1.3** overleaf, you can see a quarter wave folded monopole antenna. The radials are as before, but the vertical consists of a quarter wave of 300Ω twin-conductor ribbon feedline. The top ends of the twin-ribbon feedline are soldered together. One wire, at the bottom, is connected to the radials; and the other wire is connected to the centre of the coaxial feedline. The vertical ribbon can be suspended by clear nylon fishing line, or mounted on a wooden batten.

This antenna is quite excellent, though some 'cut and try' pruning of the vertical section may be necessary to achieve a perfect match, maximum radiation and minimum SWR. It may take time, and some wastage of 300Ω twin feedline, but if you get it right, then it is a great hanging antenna.

If you only have the option of indoor antennas, then any of the three antennas above can be used. If pushed for height, then the ribbon vertical (Figure 1.3) can be made a little 'wavy' to reduce the height. Alternatively, the verticals in Figures 1.1 and 1.2, plus many commercial antennas, can be tilted up to about 45° without a great loss in performance. It is unlikely that an indoor antenna will perform as well as an outdoor, except in those cases where it can be elevated to a superior height, eg on a multi-story building.

Other indoor antennas...

If you do not have room indoors for the radials on your commercial or home-brew vertical, then **Figure 2.1** at right may be the answer. The conventional radials are replaced by a ring ground plane having a circumference of 14.64 feet (4.46 metres). Again, a good deal of 'cut and try' may be needed. This is a much better arrangement than mounting verticals on a biscuit tin. The ring can be mounted on hardboard sheet and/or wood frame, and can be made of heavy cable; 12 SWG wire or copper tube or rod.

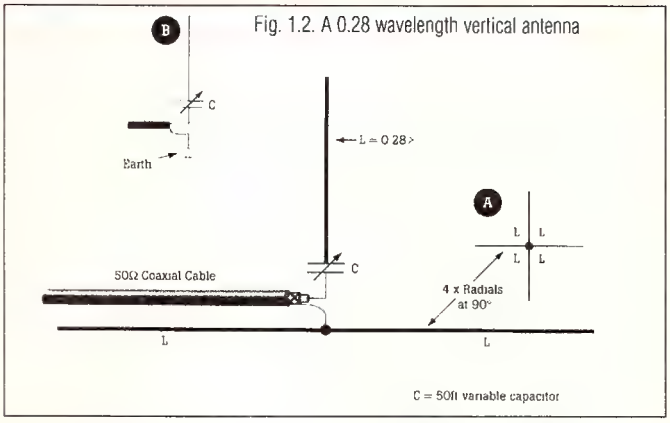

Fig. 1.2. A 0.28 wavelength vertical antenna

Camouflaged or illusionary antennas

An illusionary antenna is one that is not hidden or disguised, and is quite openly there for all to see — yet they do not see it for what it is. A prime example is using the car mobile ....☞

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Clandestine antennas...

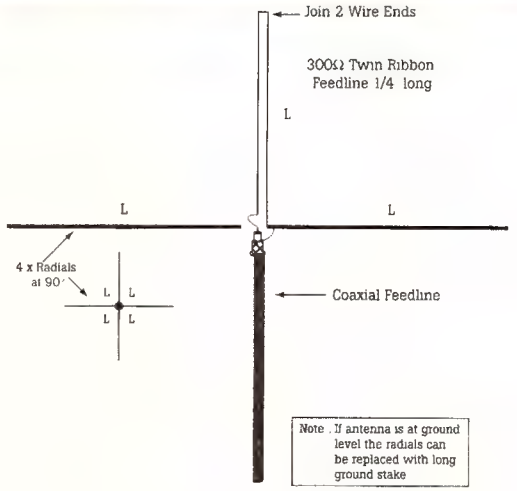

Fig. 1.3. A quarter wave folded monopole antenna

antenna with the home-base station, as mentioned earlier in this article.

You make no secret about the mobile; onlookers see your car regularly parked outside. Just build up a regular pattern of coming and going and parking (but don't forget to disconnect the coax before you drive off)! As long as the car does not have an occupant, then the onlooker will not even dream that its antenna is being used with the in-house TX. You will not get TVI accusations and you have not broken any planning regulations.

It might be worthwhile carefully surveying the outside of the residence to see if, and where, a disguised or camouflaged antenna might be erected. Obviously it should be as high as possible; however, a relatively low antenna is better than no antenna!

First, establish if there is a blind spot on the building that cannot be seen at all, or is in a shadow; and the same goes for the garden (if you are not an apartment dweller). If a likely spot is identified, then look at it in dull weather; in sunlight and in moonlight. Maybe there is a tree in the garden and an antenna could be erected in/on it. Perhaps there is some external area, or wall, that cannot be overseen from the road and neighbours. Any of the antennas featured above can be considered.

Constructional materials should be carefully selected. Metal antenna rods will reflect the sunlight and maybe even moonlight and the rain. However, it can be camouflaged with a little artistry. If wire is used for the antenna and/or radial, then enamel copper wire is much less visible than bare or tinned copper wire, or PVC-coated wire.

Camouflaging is an old art. In its simplified form, if you have a long straight edge, of any material, against a background it is immediately very conspicuous. However, using a few dabs of camouflage paint will break up that long straight edge and it will merge into the background. Large examples are warships and military aircraft. Camouflage paint should be matt, not gloss. Select a few small tins of black, brown, dark grey, dark green and white. The end resulting requirement will be a somewhat dirty/drab variation of some of these colours. For example, a few drops of dark brown paint in a tin lid of white paint will produce a drab colour.

Application of camouflage paint should be in irregular shaped daubs and blobs, to no regular pattern. Study the background to the antenna, then make up and use appropriate colours. This technique can be applied to metal rod/tube, wood supports and wires and cables. A cable, at ground level, can either run along a fence/wall; or be daubed with mud or paint, or even buried. It might be a good idea to practice camouflaging odd bits of metal and wood to work out a combination of dirty colours that merge into the background.

Not to be ignored is the outside of the building. There are probably lengths of metal or plastic guttering and down pipes; the metal gutter can be used as a groundplane, and the vertical antenna run up the roof, at roof angle. If possible, put the lower end of the vertical just above an upper window so that the coaxial feedline can drop down a short way into the window. Plastic guttering and down pipes open up possibilities — see the upside down antenna later.

I read of one DIY fanatic, in the USA, who erected a dummy plastic down pipe to match the existing pipes. However, there was no exit for the water to flow down the pipe from the gutter, and his elaborate glittering commercial vertical was safe, sound and dry inside the pipe.

(I seem to recall that one commercial outfit in the US made a two metre base station antenna called the 'Ventenna'. It looked just like the typical 'stink pipe' over the loo — big, white and ugly — but had nothing but coax connected to it! Perhaps you could stick a mobile HF antenna like a Terlin whip inside some plastic drain pipe... Ed.)

There is usually a small gap between plastic down pipes and guttering and the wall. Insulated wire anten-

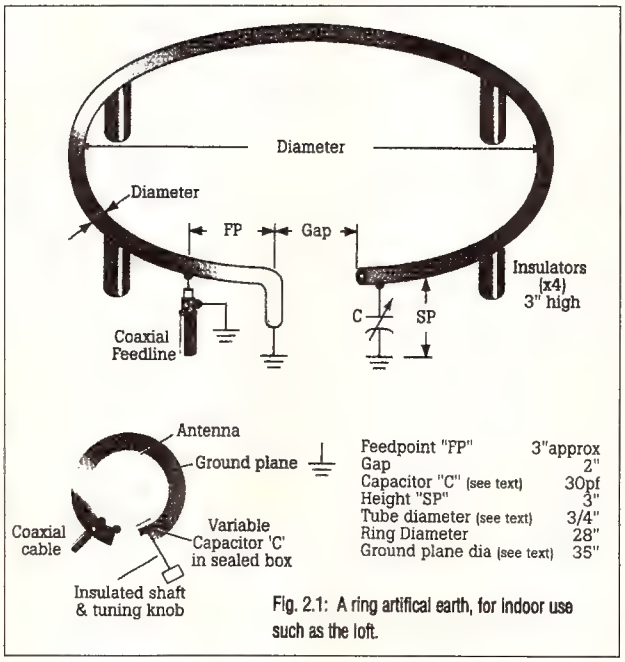

Fig. 2.1: A ring artifical earth, for indoor use such as the loft.

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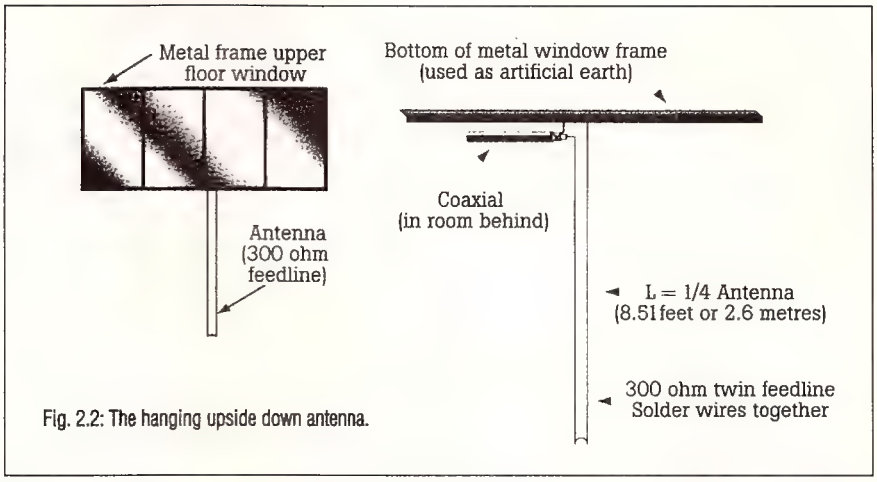
nas and radials as well as feedline can be hidden behind the pipe and guttering.

A comprehensive visual survey of the outside of the building will, no doubt, produce other interesting possibilities.

Take to the trees

If you have a reasonably tall, densely-foliaged, tree in the garden, then this has excellent antenna possibilities. Something like 50 per cent will be hidden from view. If it happens to be backed by a wall, hedge or fence, all the better as a groundplane wire can be run along them and the vertical antenna member hidden in the tree.

The folded monopole antenna (Figure 1.3) may be ideal for a tree installation. Suspend the ribbon feedline vertical from near the tree top with fishing line and/or maybe fastened to the back of the tree trunk with a few tacks carefully avoiding the conductor wires. Radials might be taken more or less horizontally across a handy fence, wall or branches. It all depends on the individual circumstances — 18 or 16 SWG enamel copper wire would be inconspicuous. Camouflage paint can be applied on any unhidden parts. No two proposed tree installations will be alike, so considerable 'trial and error' may be necessary to get such an antenna producing a maximum radiated signal.


Metal frame upper floor window
Bottom of metal window frame (used as artificial earth)
Coaxial (in room behind)
Antenna (300 ohm feedline)
L = 1/4 Antenna (8.51 feet or 2.6 metres)
300 ohm twin feedline Solder wires together
Fig. 2.2: The hanging upside down antenna.

The hanging upside down antenna

This antenna is shown in **Figure 2.2**, and is essentially a variation of Figure 1.3 mounted upside-down. As far as I know there is no antenna textbook law that says a vertical antenna cannot he fed at the top, with the groundplane at the top. I used this technique when first taking over my apartment in the USA and worked DX on both 28 and 21MHz.

A large metal window frame (about 16 feet wide) was used as the groundplane, and the 300Ω ribbon cable folded monopole antenna was hung down as shown. The 50Ω coaxial feedline went straight indoors at 90° to the window frame. I managed to find some brown ribbon cable feedline that I camouflaged with a few blobs of dull paint. The antenna was hung out of the window (three floors from the ground) when required and was never noticed. An alternative would be to use metal guttering as the groundplane.

Invisible antenna tape possibilities

Currently available — from the USA of course — is **Invisible Antenna Tape**. It consists of half inch-wide adhesive copper strip and it is claimed that it will adhere to walls, windows, doors and ceilings and can be painted over to conceal it. Soldered connections can be made to it, unlike the aluminium tape used for security devices on large shop windows.

This tape is available in rolls of 108 feet (almost 33 metres) at US$17 (presumably plus a postal charge) from Antennas West, PO Box 50062, Provo, Utah 84605, USA. The company's fax number is 0015 1 801 373 8426. I do not know if such wide adhesive copper tape is available in Australia. I also haven't actually seen or used it yet, but it seems such a sensible idea.

The self-adhesive invisible tape seems to open up all sorts of interesting possibilities for clandestine antennas. For example, a near-vertical antenna could be cut, with radials, and stuck on a sloping roof, which is usually sloping at 45° or more. Similarly, mount it on a vertical wall.

As a certain unknown amount of capacitance will be introduced, a little 'cut and try' antenna pruning will be required to achieve the correct electrical antenna length.

Another idea worth trying would be to stick the vertical antenna on the outside of a plastic down pipe (from the gutters) and hidden between the pipe and wall with radials stuck to the wall suitably painted over. The antenna in Figure 1.1 would seem to suit this installation. There are, of course, endless other indoor possibilities on the walls and so on.

There is plenty of tape for quite a lot of 'cut and try' experiments in a 33 metre roll! Good luck with your antenna hide-and-seek game. Do let us know how you get on!

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D 4810

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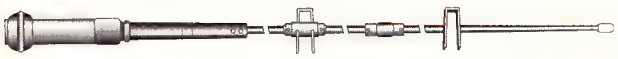

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D 4815

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Max. Power:	200W	**Max. Power:**	200W
Length:	2.5m	**Length:**	4.4m
Connector:	SO-239 socket	**Connector:**	SO-239 socket
D 4830		D 4835	
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The Listening Post

.....compiled by Michael Evans...michael@tpsa.com.au...

Well, as we get ready to say goodbye to another year, we look forward to new and exciting changes in the radio spectrum for 1998. Over the past 12 months we have seen many changes to parts of the radio spectrum, with services moving frequencies and some times entire bands to update their technology. We have seen the demise of the Spectrum Management Agency and the formation of the Australian Communications Agency — and with that we have *still* not seen the online frequency search engine that the original SMA sprouted about in 1996.

Speaking of services moving around, last month you may recall that we provided you a list of new licences applied to the ACA Radcom Database, but due to the sheer size of those changes we held the UHF part of the band over to this month, so get your scanner out and away you go...

413.4500... Transport and Works Department ..... NT
413.5000... Advance Energy ..... NSW
413.6000... Queensland Rail ..... Qld
413.6250... Queensland Rail ..... Qld
413.7250... Queensland Rail ..... Qld
413.8750... Northern Territory Police ..... NT
413.9250... Power and Water Authority ..... NT
414.1000... Northern Territory Police ..... NT
418.1500... Queensland Rail ..... Qld
418.5000... Ford Electronics ..... WA
419.3750... Queensland Rail ..... Qld
419.5000... Ford Electronics ..... WA
461.0938... Aquatas ..... Tas
461.0938... Hydro Electric Corporation ..... Tas
461.1062... Glenorchy City Council ..... Tas
461.1062... Huon Valley Council ..... Tas
461.1250... Dept of Primary Industries ..... NSW
461.3562... South Australian Water ..... SA
461.5000... Golden Heights Irrigation ..... SA
461.8687... Priam Investments ..... Qld
463.0250... MBA International ..... Qld
463.2000... Lend Lease Property ..... NSW
463.9500... General Motors Holden Vic
464.0250... Transport and Works Department ..... NT
464.2250... Tom Allan ..... Qld
464.3250... Transport and Works Department ..... NT
464.5250... NSW Rural Fire Service ..... NSW
464.5250... Tom Allan ..... Qld
464.6000... NSW Rural Fire Service ..... NSW
464.6250... Commsite ..... NT
464.8000... NSW Rural Fire Service ..... NSW
464.8250... Queensland Correctional Services .... Qld
465.1500... Rycomm Systems ..... NSW
465.7500... NSW Rural Fire Service ..... NSW
465.7500... NSW Rural Fire Service Vic
466.3750... Queensland Correctional Services .... Qld
466.9000... Two-Way Radio Rentals ..... NSW
467.0750... Lindores Rigging ..... NSW
467.7250... NSW Rural Fire Service ..... NSW
469.5000... Flight West Airlines ..... Qld
469.5000... Watpac Australia ..... Qld
469.5250... Woronora General Cemetery ..... NSW
469.5500... Lindores Rigging ..... NSW
469.5500... Terrey Hills Golf Course ..... NSW
469.6000... Mackay Entertainment Centre ..... Qld
469.6250... McConaghy Constructions ..... Qld
469.6500... Moore Park Gardens Management .. NSW
469.6750... Matthews Fire Alarms ..... NSW
469.7500... Multiplex Constructions ..... NSW
469.8750... Heponi ..... NSW
469.9250... Terrey Hills Golf Course ..... NSW
469.9500... Tahal Mount Isa ..... Qld
470.0000... Casselan ..... WA
470.0750... Mitsubishi Motors Australia ..... SA
470.1500... Rycomm Systems ..... NSW
470.5250... Casselan ..... WA
470.6750... Mitsubishi Motors Australia ..... SA
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471.0250... Casselan ..... WA
471.1750... Rycomm Systems ..... NSW
471.2250... Capral Aluminium ..... NSW
471.2250... Wiluna Gold ..... WA
471.2500... Brett & Company ..... Qld
471.2500... Brett Ronald Hayman ..... Aust-wide
471.2750... Palmer Tube Mills (Aust) ..... Qld
471.3250... Royal Agricultural Society Vic
471.5500... Paper Merchant Holdings ..... NSW
471.5500... Seca Cranes ..... Aust-wide
471.5500... Tasmanian Electro Metallurgical ..... Tas
471.6000... Shin Yen ..... NSW
471.7750... Desert Gardens Hotel Yulara ..... NT
471.8250... Royal Agricultural Society Vic
471.8250... Seca Cranes ..... Aust-wide
471.8500... Desert Gardens Hotel Yulara ..... NT
471.9500... Desert Gardens Hotel Yulara ..... NT
472.1750... Brett Ronald Hayman ..... Aust-wide
472.2250... Casselan ..... WA
472.2250... Energy Oil & Gas & Bulong Nickel .... WA
472.4000... Günther König Vic
472.8250... Energy Oil & Gas & Bulong Nickel .... WA
473.1750... Carpentaria Gold ..... Qld
473.3750... Mitsubishi Motors Australia ..... SA
473.4250... Energy Oil & Gas & Bulong Nickel .... WA
473.4750... Carpentaria Gold ..... Qld
473.8000... Rycomm Systems ..... NSW
473.9250... Memo Communications Company .... WA
474.0250... Energy Oil & Gas & Bulong Nickel .... WA
474.0750... Power Comm Service ..... SA
474.3500... Discovery Bay Developments ..... Qld
474.9250... National Trust of Queensland ..... Qld
475.0250... Capricorn Helicopter Rescue Service .. Qld
475.1000... Matrix Project Management ..... Qld
475.2000... Casselan ..... WA
475.2750... Mitsubishi Motors Australia ..... SA
475.3500... Rycomm Systems ..... NSW
475.7250... Casselan ..... WA
485.0500... Austoft Industries ..... Qld
485.0750... Woodside Offshore Petroleum . Aust-wide
485.1250... Austoft Industries ..... Qld
485.1250... Woodside Offshore Petroleum . Aust-wide
485.1500... TNT Australia ..... Qld
485.2500... Federal Airports Corporation ..... Act
485.3500... Power Comm Service ..... SA
486.4750... Woodside Offshore Petroleum . Aust-wide
486.6750... Federal Airports Corporation ..... Act
487.0750... Woodside Offshore Petroleum . Aust-wide
487.3750... Woodside Offshore Petroleum . Aust-wide
487.4500... Robert Luxmoore Vic
487.7750... Rockwell Australia ..... NSW
489.8250... Darling Harbour Authority ..... NSW
490.1750... Rycomm Systems ..... NSW
490.2000... Curtin University of Technology ..... WA
490.8250... Rycomm Systems ..... NSW
491.2250... Amalgamated Television Services... NSW
491.2750... Rycomm Systems ..... NSW
491.6250... Couriers Please Vic
491.6500... Mayne Nickless Vic
491.8500... Rycomm Systems ..... NSW
492.2750... Rycomm Systems ..... NSW
492.4250... Rycomm Systems ..... NSW
492.4750... Rycomm Systems ..... NSW
493.1000... Couriers Please Vic
493.3750... J R Fettell ..... NSW

493.3750. . . Rycomm Systems . . . . . NSW
493.6500. . . Rycomm Systems . . . . . NSW
493.6500. . . Rycomm Systems . . . . . NSW
494.3500. . . Radio Technologies Vic
494.5000. . . Couriers Please Vic
494.7500. . . Queensland Rail . . . . . Qld
494.9500. . . Transfield . . . . . SA
495.0500. . . BTW Communications . . . . . Aust-wide
495.1500. . . Shell Company of Australia Vic
495.1750. . . BTW Communications . . . . . Aust-wide
495.3750. . . Rycomm Systems . . . . . NSW
495.4000. . . Curtin University of Technology. . . . . WA
496.0250. . . Rycomm Systems . . . . . NSW
496.4250. . . Amalgamated Television Services. . . . . NSW
496.4750. . . Rycomm Systems . . . . . NSW
496.8250. . . Couriers Please Vic
496.8500. . . Mayne Nickless Vic
497.0500. . . Rycomm Systems . . . . . NSW
497.4750. . . Rycomm Systems . . . . . NSW
497.6250. . . Rycomm Systems . . . . . NSW
497.6750. . . Rycomm Systems . . . . . NSW
498.3000. . . Couriers Please Vic
498.5750. . . J R Fettell . . . . . NSW
498.5750. . . Rycomm Systems . . . . . NSW
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499.7000. . . Couriers Please Vic
499.9500. . . Queensland Rail . . . . . Qld
500.2250. . . Telstra Corporation . . . . . WA
500.2375. . . Telstra Corporation . . . . . WA
507.0250. . . Telstra Applied Technologies . . . . . Qld
507.3750. . . Rycomm Systems . . . . . NSW
507.6500. . . Mayne Nickless Vic
507.8000. . . Telstra Applied Technologies . . . . . WA
507.9000. . . Telstra Applied Technologies. . . . . NSW
507.9000. . . Telstra Applied Technologies . . . . . WA
508.2750. . . Rycomm Systems . . . . . NSW
509.4750. . . Chadian . . . . . NSW
509.4750. . . David Jones. . . . . Aust-wide
510.2250. . . Telstra Corporation . . . . . WA
510.2375. . . Telstra Corporation . . . . . WA
517.0250. . . Telstra Applied Technologies . . . . . Qld
517.3750. . . Rycomm Systems . . . . . NSW
517.6500. . . Mayne Nickless Vic
517.8000. . . Telstra Applied Technologies . . . . . WA
518.2750. . . Rycomm Systems . . . . . NSW
519.4750. . . Chadian . . . . . NSW
519.8000. . . Queensland Health. . . . . Qld

So there you have it. As you can see, there are a lot of new entries into the database so you'd better start cross-checking your information already on hand.

To those people who said Hi! along the road while we were off on the Vic Health Herald Sun Tour, it was good to hear you on the airwaves. While we journeyed around the state of Victoria and into southern New South Wales we had many people give us a call on UHF CB Channel 40 and on the 27 MHz CB Channel 8. The race was a huge success once again, and I hope you all enjoyed listening in on the race channels as we zipped through your area. I hope we see and hear you again next time around.

Well, that's it for another column. Until next time happy listening.

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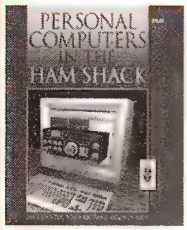
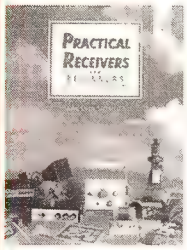


Personal Computers in the Ham Shack

For the computer whiz or the neophyte this handy book explores the ways you can enhance your hobby with your computer. Lots of advice on operating systems and software as well as the Internet

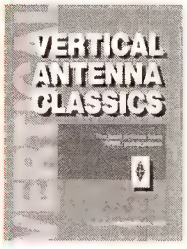
BR89 **$33**



Practical Receivers for beginners

Build a DC receiver for 80 & 20, or the "Super-7" for 40, maybe even a simple 50MHz FM receiver, they're all here in this wonderfully practical new book from the RSGB! Great projects, plenty of good practical advice.

BR79 **$33**



Vertical Classics

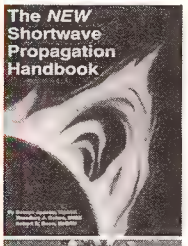
Here is a great collection of info on vertical antennas, from modelling and theory, through practical designs for HF, VHF and UHF as well as information on directional arrays, how to reduce size and how to set up your ground systems, all collected in one place at last!

BR70 **$26**

Practical Transmitters for novices

Build a DSB transmitter for 160, transmitters for 80m CW, 6m FM as well as for 1.3GHz and 10GHz as well as the test equipment to get them going. This practical book is great for the novice or experienced ham.

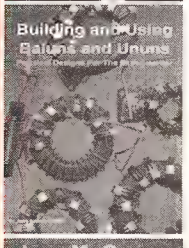
BR74 **$26**



The NEW Shortwave Propagation Handbook

If you operate HF, or you are a shortwave listener, then you need to know about propagation and this is the book to tell you what you need to know! This 1995 book is up to date with the latest science and software information.

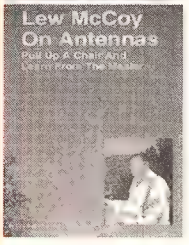
BR92 **$35**



Building and Using Baluns and UnUns

Renowned for his work on Transmission Line Transformers, Dr. Jerry Sevick has now given us a wonderful practical guide to the construction and use of a series of baluns and ununs. Lots of practical stuff not available elsewhere!

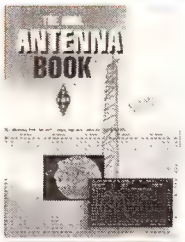
BR93 **$35**



Lew McCoy On Antennas

Pull up a chair and learn from the master! Lew McCoy W1ICP is well known for his ability to make complex subjects understandable, and this book is a perfect example of that. Very useful with lots of practical how-to ideas for your base or mobile station.

BR94 **$35**



The ARRL Antenna Book

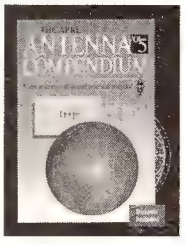
New 18th edition of this essential reference has been updated and has new information on the effects of the earth, low frequency antennas, maritime installations and mobile antennas. With high quality software included.

BR88 **$58**

Shortwave Receivers Past & Present

This just released 2nd edition is a masterpiece of the collectors art! Over 350 pages of info on English, American and European receivers from 1945 to 1996. Full of information not available elsewhere.

BR87 **$40**



Antenna Compendium Volume 5

Five articles on 160 & 80 metre antennas, 7 on VHF & UHF, 6 on modelling, 5 on multiband antennas, 3 on propogation & ground effects, 3 on measurements, 4 on special antennas, 5 on tuners, baluns & lines, plus software!

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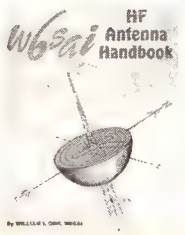

W6SAI HF Antenna Handbook

How to build them, how to design them, how to match them and how to analyse them. All in this one practical volume with a host of practical designs you can build easily. From one of the great ham radio authors another great book.

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Shrink your library! The ARRL has released the first volumes of an all new series fo CD-ROMs containing the entire collection of QST magazine from 1915. In sets of three CD-ROMs, each set covering five years.

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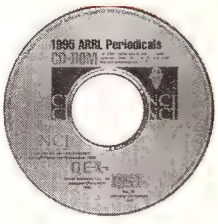
BR503 (1970-1974) **$69**

ARRL HANDBOOK V1.0 CD-ROM

An ARRL Handbook weighing just a few grammes? Yes it's reality! Fully searchable, printable and easy to use this single CD-ROM gives you the entire 1997 ARRL handbook and the software distributed with the book version.

BR489 **$69**

ARRL Publications CD-ROMs



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Dual band features at a single band price

Switchable dual bander provides dual band capability, one band at a time, via band switching system. The front panel can easily be separated from the main unit using the optional OPC-600 cable and a variety of mounting options. Separate CTCSS encoder and encoder/decoder are supplied as standard allowing independant tone squelch and repeater access operation. The compact size and flexibility of the IC-207H make it ideal for todays crowded motor vehicles with little or no room for a radio.

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- n Output power 50W 2m and 35W on 70cm
- n Four selectable output power levels
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- n Soft keys for ease of use and configuration
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ICOM R10 receiver

Possibly the most anticipated receiver of recent history has arrived. After the R1 what could Icom do to improve? How about better sensitivity, selectivity, & intrermod performance, all modes, backlit display & keypad in a lighter and tougher package than even we thought possible.

- n 0.5 - 1300MHz
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- n Real time bandscope
- n Voice scan control
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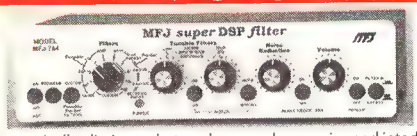

Automatically eliminates heterodynes, reduces noise and interference on SSB, AM, CW packet, AMTOR, PACTOR, RTTY, SSTV, WEFAX and FAX as well as weak signal EME and VHF signals.
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Another MFJ innovation! Here at last is an economical 300W rated atenna tuner with the matching performance of a roller inductor. And even better still, it works all the way through 6 metres. Here is an all new tuner based firmly in the MFJ tradition of performance and value.

- Frequency range: 1.8-54MHz, all HF bands + 6m
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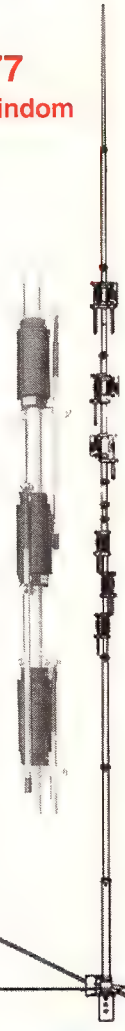
10 metres	1.7MHz
12 metres	100kHz
15 metres	500kHz
17 metres	100kHz
20 metres	250kHz
30 metres	100kHz
40 metres	150kHz



Dayom and HyGain introduce the the DX77 Advanced vertical WIndom with features surpassing any HF vertical on the market. The superior mechanical design, high power capability and 55% greater bandwidth than competitive verticals on 20 and 40 metres make it an exceptional value for a high performance system.

The unique design of this vertical antenna provides a no compromise performance without the need for ground radial wires. It puts the world at your fingertips on the HF ham bands, 10 through 40 metres, including the WARC bands! Capable of handling 750W average or 1500W PEP the HyGain DX77 won't balk at the output of your linear! Automatic band-switching and low angle of radiation allow for enhanced DX performance.

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IN FLIGHT INFO

**With Bob Bell, VK2UTG,
PO Box 16,
Georges Hall,
NSW 2198**

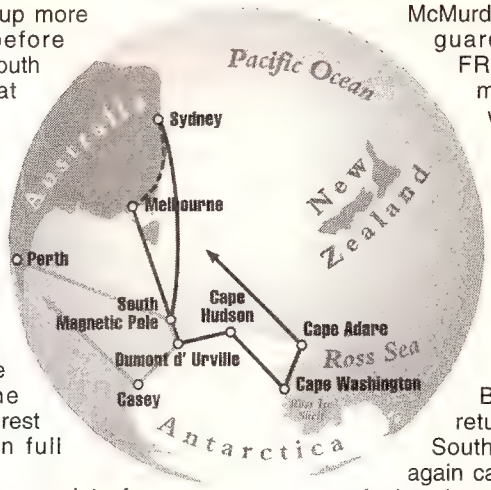
During 1997/1998, 10 special flights to Antarctica are being operated by Qantas, in conjunction with Croydon Travel. Passengers will see the magnificent Antarctic continent with its awe-inspiring and ever-changing vistas of magnificent polar plateaus, glaciers, and vast expanses of permanent ice.

During the flights, experts on Antarctica are on board and are at the microphone, providing passengers with a detailed insight into the ice-continent's environment and history. They will be showing videos depicting what life is like on the ground on the way to the destination. A special camera on the flight deck will provide a 'pilot's eye view' of the scenery when the flights are actually over the ice, and at take-off and landing.

The first icebergs are usually spotted from the aircraft about three hours flying time south of Hobart, followed by many, many more. The Polar ice-cap, the South Magnetic Pole, close-up views of the French base at Dumont d'Urville and the rugged Antarctic mainland coastline are all to be taken in by the lucky passengers on board the special flights.

The first of the 10 flights is airborne on November 30 — that's in just four days — and they'll continue right through to February 1998, incorporating departures from Sydney, Melbourne and Perth. If you would like to be a part of all this and have a look at the world's last great wilderness, there's a freecall number where you can ring for a colour brochure of what you'll see on the journey. The number is 1800 63 3449. So far, over the past three summers, Qantas has safely conveyed some 8,000 passengers on 25 separate flights to the Antarctic continent.

If you can't afford the fares, which range from $799 to $3199 per person, and would still like to become involved, why not be there the next best way, using your radio receivers? Callsigns for the flights are believed to be as follows: QF 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609 and 2610. The first departure next Sunday, November 30, departs from Sydney, then lands in Melbourne to pick up more passengers, before departing for the South Pole. The arrival at the South pole is timed for exactly twelve midday. The Antarctic is in daylight at this time of years for a full six months, so even the night passengers on the special New Years Eve flight will be able to look at the South Pole and the rest of the Antarctic in full daylight.



Flightdeck crews consist of: Aircraft Commander, one supernumerary Captain, one First Officer, one Second Officer, two Flight Engineer Officers, a Cabin Crew Line Manager, a Flight Service Director, and 17 Flight Attendants. Prior to acceptance as Aircraft Commander, each Captain has to prove previous operational experience to Antarctica as a crewmember.

Overflights of the Antarctic keep primary guard on HF South Pacific frequencies 3467, 5643, 8867, 13,261, and 17,904 kHz, with Brisbane Radio. Brisbane ascertains the ETA of the aircraft for 60 degrees South, and at 60 degrees South, McMurdo Station assumes guard on the DEEP FREEZE radio communications network. Auckland Radio is also on the DEEP FREEZE network, but SelCall is not available. There is an AFTN teletype circuit between McMurdo, Auckland, and Brisbane. On the return journey, at 60° South, the aircraft once again calls Brisbane Radio for its primary guard.

DEEP FREEZE frequencies are 5726, 8998, 11,256 kHz (all upper sideband), with McMurdo identifying as 'MAC Centre'. Satellite communications from the aircraft at the South Pole is considered unreliable, so HF for once comes back into the forefront position.

Communications are established while on the journey with various Australian Antarctic bases, along with phone patches to media organisations for radio and TV interviews. The DEEP FREEZE frequency 11,256 is often unreliable due to frequent heavy magnetic interference. The Captains

More satellite comms...

ARINC has introduced FANS 1 communications through SatComs to the Auckland Flight Information Region. Airways Corporation of New Zealand selected ARINC as its communications service provider earlier this year, and under the terms of the contract, ARINC is providing air-ground communications within the Auckland FIR as part of the final phase of ACNZ's upgrade to an automated oceanic air traffic control system.

ARINC's FANS 1 service has seen the introduction of controller-pilot digital datalink communications (CPDLC) and automatic dependent surveillance (ADS) between Airways Corporation of New Zealand oceanic air traffic controllers and flight crews of FANS-equipped aircraft.

Since 1995, ARINC has provided internetworking communications for an interim Oceanic ATC workstation. ARINC is also the provider of FANS datalink services to the United States Federal Aviation Administration, and is the service provider for ATC communications in the Pacific Ocean FIRs which fall under Oakland and Anchorage Air Route Traffic Control Centre.

ARINC is also conducting SatComs trials for FANS 1 in the Russian Far East. The United States Federal Aviation Administration now has 24-hour operations of FANS 1 Oceanic Datalink Service from its Oakland Air Route Traffic Control Centre. The Pacific airspace for US West Coast through to Honolulu is known as 'Oakland Oceanic Sector 3', much the same as Brisbane's Sector 6 covers the Tasman Sea area.

Brisbane and Nadi also have FANS 1 Digital datalink running 24 hours a day, for FANS-equipped aircraft, such as the Boeing 747-400 series operated by airlines such as Qantas, Air New Zealand, and United.

obtain weather updates from Macquarie Island or direct from McMurdo. Hourly weather updates are usually requested of Brisbane, Auckland or McMurdo Radio. Navigation equipment (IRS) is checked while overflying beacons (NDBs) at Macquarie Island and Casey Station, and also while overflying the VOR/DME at France's Dumont d'Urville.

Qantas Control frequencies are also utilised to communicate with the company on HF/LDOC (Long Distance Operational Control) channels, using the Qantas Sector 4 Indian Ocean Hybrid Antenna, which covers the Antarctic. The flight deck crew use special microphone-mounted DTMF pads to initiate contact and to unbelievably actually steer the mainland company antenna to be re-oriented towards the aircraft's position at the time! Ionospheric hourly area predictions are available in chart form for the Captains, and a daily communications logsheet is produced using what is known as the 'T-Index' for each individual day.

In addition to HF, a TIBA (Traffic Information Broadcast by Aircraft) VHF channel is widely used in the Antarctic. The common frequency is 129.7 MHz. ANARE frequencies (Australian National Antarctic Research Expedition) are also utilised by Qantas flights: 3023, 3418, 4678, 6610, 8938, along with their VHF 121.1, 129.7 and 121.5 MHz.

The frequency 5400 kHz (USB) is the most utilised HF watch frequency in the Antarctic. It belongs to the frequency family 3175, 4040, 4540, 5400, 6905 and 8110, operated as Land Mobile frequencies by the Australian and New Zealand Antarctic stations.

Others channels you will require:

Auckland / Brisbane
SP family 3467, 5643, 8867, 13261, 17,904 kHz (USB)
Casey (VNJ), Davis (VLZ) and Macquarie Island (VJM)
3023, 3418, 4678, 6610, 8938 and VHF 121.1, 121.5, 129.7 MHz
Scott Base (ZLQ)
2773, 5400, 8010 and VHF 126.0 MHz
French Dumont d'Urville (FJY3)
VHF 121.5, 125.4, 127.9
McMurdo Centre (MAC Centre)
8998, 11256, 5726
Perth Radio
3470, 6556, 11,396, 13,318, 17,907 (SEA-3)
3476, 5634, 8879, 13,306, 17,961 (INO-1)
Sydney Skycoms
3007, 4666, 5160, 6532, 8140, 8903, 8930, 8936, 9040, 10,072, 11,132, 11,417, 13,300, 13,817, 15,750, 17,440, 17,934, 17,940, 20,160, 23,070. (Note that phone patches are illegal to monitor; supplied for overseas information only.)

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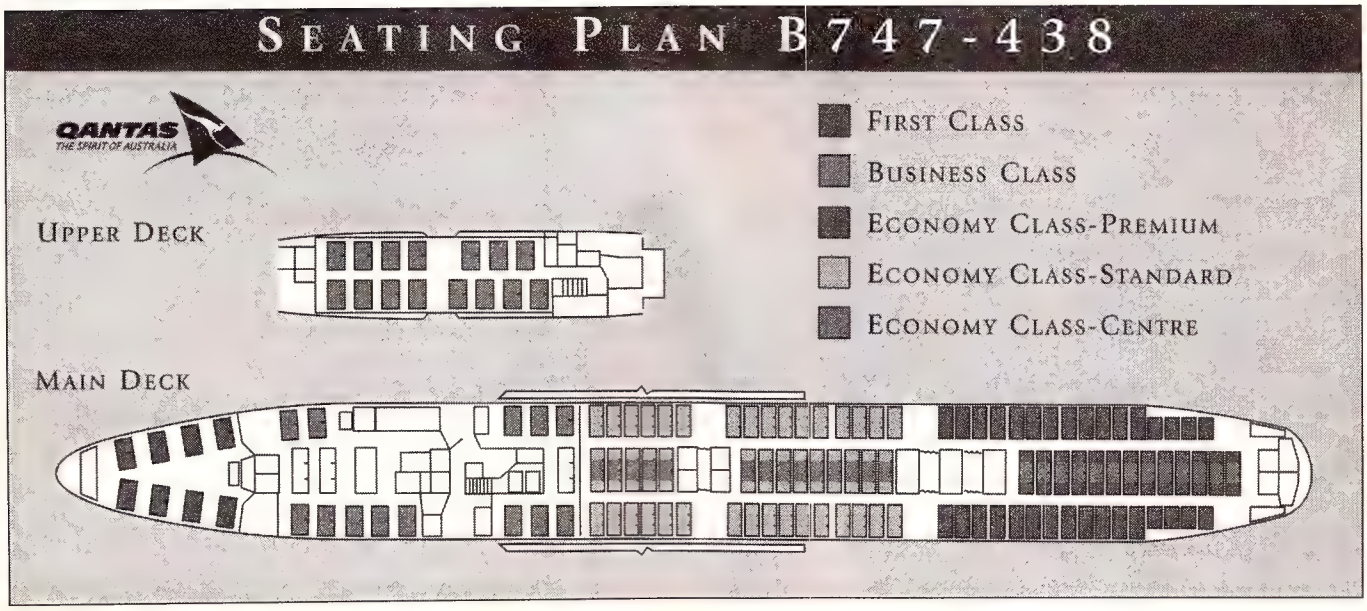

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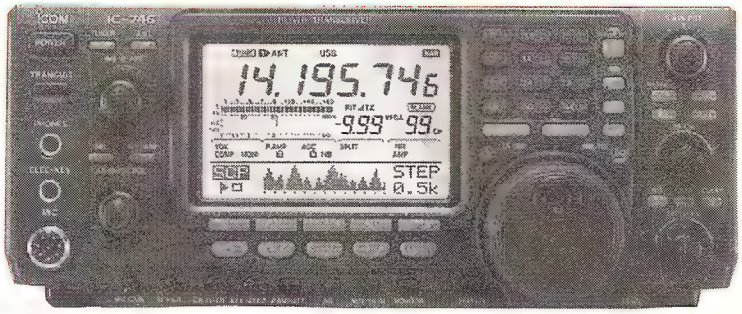
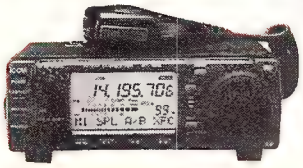


100W ON HF • 6m • 2m

Similar to IC-756 however lower cost

(comparing JA prices model to model)



IC-706 MkII $2249

IC-756 $3399

IC-821H $2999

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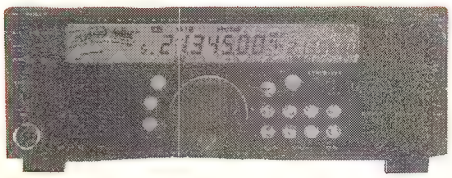
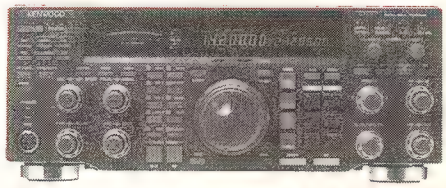
Full 2 Yr Warranty on all ICOM



TS-570S HF+6m $2499
with auto tuner

Beautiful blue display
TM-V7A $945
deluxe twinband mobile

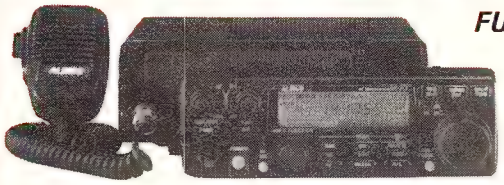


TS-870S DSP HF $3699
deluxe HF transceiver

ALINCO DX-70TH

100W 6M + 100W HF

Why Pay More?



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Made in Japan quality
Compact, front panel remoteable HF+6m All-Mode Transceiver

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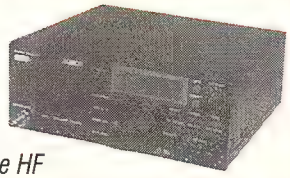
NEW DX-77 100W HF TRANSCEIVER



DX-77E
$1,149
Must be the most power cost effective HF radio in Australia!

Sample Now Here!

DX-1600 HF LINEAR

DX-1600A
$3,950
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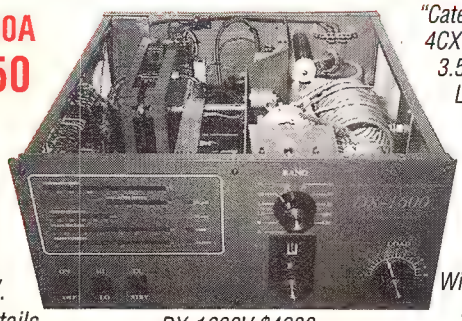

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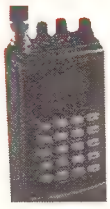

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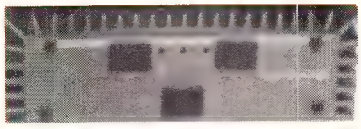

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ANARE 1997 — 50th anniversary year

Life on Macquarie Island

By Tom Stokes, VKØTS. Introduced by Jim Smith, VK9NS.

I am indebted to Tom, VKØTS for the following material. The technology of the day enabled the material to sent by E-mail to the UK where it was edited during my vacation.

It must be a unique experience to 'Winter Over' on a sub-Antarctic island such as Macquarie. I thank Tom for providing some background to his life on the island for the past year. Tom, VKØTS has been as active on the amateur radio bands as his work schedule has permitted, and as a result some 2,000 stations have now made a QSO with this rare DXCC country. 73 Jim, VK9NS

I have been here since November 1996, arriving on the *Aurora Australis*, Voyage 3, for the 1996/97 season. My job here is as a radio technician and I work with 18 others to maintain the equipment to support the science programs on the island. These programs are varied and cover a wide field of multi-interest groups. For example, we are recording the seismic and magnetic data, studying the many species of penguins, the sea birds including the majestic wandering albatross and the many seals on the island. Macquarie Island is a spectacular place to be.

The first sight of the Isthmus area (the neck of Macquarie Island) and the ANARE station is amazing. The radome which houses the main satellite link stands out amongst all the buildings. It is as though a 12m diameter golf ball had been dropped into area waiting for that next drive of a golf club shot.

Location

Macquarie Island is very remote and only a tiny spot in the Southern Ocean. It is far from the normal shipping routes and it is certainly not a good weather area. In fact, most of the normal shipping avoids the waters of these Southern areas due to the pattern of rough sea weather.

The weather can really get you down in the early days on the island. However, as one gets acclimatised and once you begin to see the magnificent wildlife all around, then one begins to appreciate the wonder of these sub-Antarctic islands. Macquarie Island is one of only a few islands in the world is these latitudes. Penguins and seals are in abundance during the summer, and even in winter many are still around. I see them every day and they are now a part of my life — quite different to those early days when my camera was always ready to take this or that picture.

Macquarie Island is often thought to be a land of snow and ice with perhaps even a few icebergs around. However in the summer season the island is lush and green with grasses and mosses in abundance. The temperature is moderate but changeable, with snow falling, not staying soft and powdery but melting then freezing again. The strong westerly winds often clear the snow away ready for the cycle to be repeated.

Here on Macquarie Island, air drops were at one time conducted fairly frequently but since 1991 these have been curtailed. Tourist ships are about the only visitors apart from the various ANARE crews. Tourist activity is very restricted and controlled. This limits tourism to a maximum of 500 visitors per year, with only 60 at any one time permitted at specified landing areas. Macquarie is a restricted wildlife reserve and is heavily protected. The Tasmanian Parks and Wildlife Service (TASPAWS) administers the island in this respect. The Antarctic Division is responsible for the ANARE Station and its administration.

The station

The accommodation at Macquarie Island consists of building from the 1950s, the '60s and the '70s. Therefore, many are old, and refitting of these buildings is taking place slowly but steadily. The accommodation is by no means luxurious but all the necessities are there.

The station is well laid out in the isthmus area of the island, and there are 30 or so buildings. Like the accommodation area, many are at

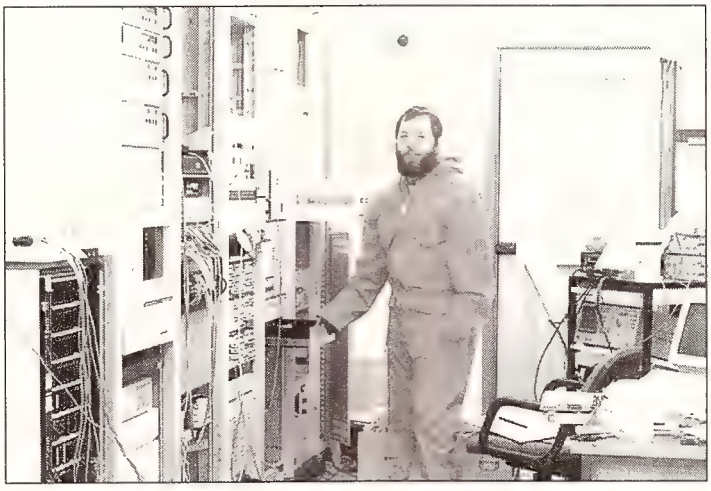
least 20 years old. Of course in this climate any old building usually looks considerably older due to the effects of exposure. Everything is magnified with the almost constant presence of a salt-laden atmosphere and any unprotected metal starts to rust in a matter of days.

The staff

The various 'Trades' of the ANARE Team have nicknames. Station Leader: OIC; Senior Comms Tech: Radio-Tech; Comms Tech: Radio-Tech; Met Obs: Met Fairy; Met Tech: Met Fairy; Mechanic: Dieso; Electrician: Sparky; Chef/Cook: Cooko; Plumber: Plumber (!); Carpenter (two): Chippy (Chippies); Biologists: Bios/Boffins; Rangers: Rangers; and Engineer: Boffin.

All of these trades and professions combine to keep the station running. Most of us help each other with their work when needed and this leads to diversity in many areas.

Station meals are at set times daily, and on Saturday there is a formal dinner for all. Sunday is a very relaxed day around the station as it is our day off.



Power

The station has ample AC power with back-up facilities. Two large diesel engines run continuously, supplying the more than 30 buildings of the ANARE complex with power. The back-up power station is more or less a duplicate system housed in a separate building next to the power house.

Heating for the buildings is mainly arranged by using hot water pumped from the power house and then circulated in pipes through the various buildings. In some cases buildings now have electric heating.

Communications

In our case this year we have a large works program in place to cover our winter activities. In the Comms Section major refurbishment has been (and is still) taking place. With the installation of the ZETRON console system this interfaces our radios into one console. In this way all radios can be placed in a remote location and operated from the Comms building. For example, the console now controls two HF transceivers, two airband transceivers, two marine VHF repeaters and some of our HF receivers.

Other projects have included the removal of the long wire antennas from towers to improve helicopter access. Installation of the Ethernet/Phone system in the new station leader's building and relocation of HF transceivers for a new emergency station at 'Hamshack Hill'.

External comms locations

Although there are three VHF repeaters on the station, some of our equipment is off base.

Wireless Hill has a 25W marine repeater.

Mt Elder has a similar 25W repeater.

Mt Waite has a 1W voice storage forward repeater which has just been upgraded to 5W.

Both Mount Elder and Mount Waite are in extreme locations, and access to these sites is often difficult with fog, mist, sleet and/or snow almost always present.

We're out of space, so we'll wind up Tom's report next time...

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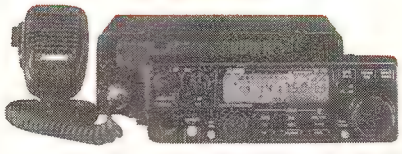
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Pirate Radio... alive and well!

By Jack Haden, VK2GJH

Out-of-band transmissions, spectrum anarchy or just plain pirate radio activities — call it what you will — it's been going on since radio was invented and will continue to do so well into the future. In recent years Australian and American authorities, amongst other nations, implementing cost-cutting directives, have been steadily closing down radio spectrum monitoring stations, while some third world countries never had such stations in the first place!

A lot of interference we come across, in some cases, we have to accept as we must share the allocation with other radio services as we are only the secondary users of the allocation and thus must accept any interference caused by primary users. However, it appears we get more than our fair share of intruders generating interference on our exclusive allocations too.

The authorities, not only in Australia but many other countries too, are often slow to act on complaints lodged by individual radio amateurs or radio clubs with often days, weeks or months passing before the complaint is attended to. The authorities tell us that a lack of staff, bans on overtime or budget cutbacks are the contributing factors causing a delay in acting on complaints about spectrum abuse.

In times of crisis...

In times of war spectrum anarchy increases, law and order breaks down, governments fall and thus numerous forms of illegal radio traffic pops up and so enter the clandestine (spy) stations, out-of-band military or propaganda stations.

There's very little, in most cases nothing, we can do about these intrusions should they chose amateur bands for their activities, as official protests are ignored even if we can prove who the culprit is. Using huge commercial or military transmitters and large antenna farms, we are no match in the battle to move them off our frequencies and thus have to put up with the intrusion. The Russian Woodpecker of a few years back was a prime example of international spectrum abuse on HF radio by the then USSR.

Not all run mega stations; small portable spy stations, as seen on cold war movies, pop up on some rather obscure frequencies, amateur radio ones included. For years we've known about Fretlin Radio clandestine operations — one such station was apprehended in Darwin a number of years back. More recently, Radio Free Bougainville in Papua New Guinea, using an amateur radio transceiver, has been heard around the 80 and 75 metre amateur allocations. These are the ones we know about, how about the ones yet to be discovered?

Amateur transceivers, the cheap spectrum access alternative?

There's a huge number of small time violators too. Amateur radio transceivers are easily purchased these days, more often than not a license is not required at point of sale. (It can contravene trades practices regulations to selectively prohibit sales.)

Quite a large number of HF and VHF transceivers (particularly the older models) can easily be modified for general coverage transmit as well as receive for a few dollars more. Here in Australia local hoons have been busted for jamming police UHF radio using modified amateur or citizens band UHF transceivers.

Amateur transceivers are a cheap alternative to commercial transceivers, and often appear in a variety of illegal radio applications with some blatantly using our amateur frequencies or other parts of the spectrum. Still in Australia, quite a number of modified amateur transceivers can be found on the RFDS frequencies, as well as marine allocations, due to the high costs of the proper type-approved transceivers.

Harmonics and birdies...

Finally, we must keep in mind that quite a number of amateur transceivers, especially older models, are subject to interference generated by harmonics by powerful transmitters on other frequencies. Should you find Radio Australia reasonably audible on 14.200 MHz, then you have a second or third harmonic of the actual frequency RA is on.

Likewise, many older transceivers emit what is known as 'birdies' on some frequencies too, giving the impression of phantom carriers or other pulse-type noises, and by disconnecting the antenna from the transceiver you will soon learn whether this noise is generated by your own radio or not.

160 metres: 1.800 - 1.875MHz

Out-of-band pirate broadcasters are one of the major problems we face on this band. Even though we have exclusive use of the 1800 to 1825 segment, we still get trounced on now and again by something ....☞

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that shouldn't be there. Sometimes it's an illegal broadcaster or a beacon station, and if they are found to be above 1825kHz there isn't a great deal we can do about it, as we are the secondary service in that section of 160 metres.

80 metres: 3.500 - 3.800MHz

Being a noisy band at the best of times, 80 metres remains relatively unmolested in the South Pacific... some nonsense out of Asia now and again plus the comings and goings of pirate broadcaster Radio Free Bougainville is the only noticeable activity observed in recent times.

However, pirate activity abounds in Latin America, Europe and Africa where drug trafficking and other clandestine operations run wild across the band. Some using high-tech high-speed data transmissions can be found when conditions are right... no callsigns, no names, just high-speed traffic.

40 metres: 7.000 - 7.300MHz

Quite often errant shortwave stations stray onto the exclusive amateur allocation and, once established, are quite often hard to remove despite official protests. China and North Korea are the main culprits in our region. Africa and the Caribbean receive their fair share of intruders, too, with out-of-band broadcasters and drug traffickers the main culprits.

Pirate activity is rampant in the Pacific on the amateur allocation; large American purse-seiner fishing trawlers and their Taiwanese counterparts can be heard all over the band (7.035 and 7.050 are favourite meeting spots). As can be expected, they don't use callsigns but chatter for long periods about who's catching what and where. Foul language and graphic descriptions about what the crew got up to on their last leave is common banter.

Cruising yachts pirating amateur callsigns (careful; some are legal!) are commonplace on 40 metres too, not to mention clandestine activity related to drug trafficking with coded voice transmissions logged on an increasingly regular basis in the Pacific, Caribbean, Asia and Europe. Spy stations (often called 'numbers' stations) and suspicious CW beacon markers also pop up between 7.000 and 7.100.

Asian language SSB is often found in the 7.000 to 7.040 CW portion of the band too; 7.005 is a popular frequency they use. What are these people up to? Are they using amateur radio transceivers? Why don't amateurs in their own country do something about it — surely they can hear it too? Should local amateurs complain, or would they receive retribution from their own government?

30 metres: 10.100 - 10.150MHz

The entire allocation on the 30 metre band to amateurs is on a secondary basis, so we must accept what others dish up to us there by way of interference. Some are entitled to be there, whilst others are not and are just along for the ride.

In 1992 a prominent church group in Micronesia was caught using 10.138 SSB without a valid amateur license. Using amateur gear, they were using this frequency for phone patch traffic. The operation was closed down due to protests from Pacific island radio amateurs; as they were speaking in island dialects they went undetected by English-speaking amateurs.

Two years ago a small group of expatriate Australians were caught using 10.120 SSB for illegal traffic between a South Pacific island and their base in Queensland. Again, amateur radio equipment was utilised. The same group was known to frequent 7.210 and 14.340 from time to time.

20 metres: 14.000 - 14.350MHz

Quite a number of government agencies have been sprung illegally using the 20 metre amateur bands to conduct their so-called 'official' business, the CIA being one of them! Most use high speed data transmissions with the traffic immersed in a code.

The old USSR may be finished, but not so the illegal traffic which still emanates from the now independent states where it's still business as usual, it seems.

Recently, an Asian immigration racket was found to be using amateur frequencies on 20 metres to conduct traffic between China and North America with base-to-base and base-to-ship operations in place. Television footage showing one premises raided in Canada showed an Icom transceiver still switched on with 14.115 clearly on the display!

Cruising yachts have always attracted a cloud of suspicion. Some buy their callsigns from corrupt officials in developing nations, hence the exotic callsign. Others just 'borrow' legitimate callsigns from unsuspecting amateurs or look for 'holes' (missing or not yet allocated callsigns) in a current callbook.

Quite a lot of unusual maritime activity takes place above 14.300; check out the European pirate yacht frequency of 14.355MHz and up. If the callsigns used on 14.315 were legal to start with why come up here after the net ends?

15 metres: 21.000 - 21.350MHz

In the past, full call amateurs used to complain a lot about errant Novice licence holders sneaking above 21.200 (the rules have since been changed in this regard) chasing the rare DX, but this is really nothing to worry about too much it appears.

Asian fishing boats in the Pacific just *love* this part of the spectrum, with the main offenders originating from Japan, Taiwan, South Korea and the old USSR. As the traffic is conducted in their mother tongues and high-speed data modes, it goes unchallenged by radio amateurs in English-speaking countries, meanwhile they use amateur bands to exchange information whilst, in the majority of cases, illegally fish in waters they are not licensed to, hence the reason they are reluctant to use allocated company or marine band frequencies.

The fishing boat people are not alone. Recently an Asian logging company in Vanuatu was monitored using 21.150 for traffic to its sister operations in Malaysia and Papua New Guinea. As they were talking in their native tongue people in English-speaking countries would be none the wiser on what in fact is really happening. Asian amateurs chatting amongst themselves? Not so it appears!

Shortwave intrusions into the top half of 15 metres have always been a problem, especially from south-east Asia and Latin America and sometimes Europe. This is in particular quite bad when the sunspot cycle is at its peak and thus the proper 21MHz shortwave allocations become very overloaded.

12 metres: 24.890 - 24.990MHz

Nothing has been detected really out of the ordinary on this allocation. With current poor propagation levels, this band remains very dormant as far as *any* kind of radio activity is concerned, let alone illegal usage.

10 metres: 28.000 - 29.700MHz

Even though a number of radio amateurs blame pirate CB operators for the majority of intrusions to this band, quite a lot of the intruders have nothing at all to do with CB radio, especially when it comes to south-east Asia and Latin American countries.

Incessant Asian chatter is commonplace on 10 metres during the peak of the sunspot cycle, especially on the 28.000 to 28.500 portion of the band.

Military personnel from Indonesia, Vietnam, Cambodia and Laos have been found to be using our 10 metre allocation for military traffic, mostly on AM and FM modes, often

with scramblers being used.

Also taxi cab/courier companies in many developing Asian and Pacific island nations use 10 metres to get away from the congestion on the CB radio channels. Most use AM or FM modes, with modified CB equipment from the 'Superstar' series of transceivers being most preferred.

6 metres: 50.000 - 54.000MHz

Not a great deal to be found out of the ordinary on this band due to its erratic propagation paths and possibly due to 50MHz transceivers being less popular than others such as HF and two metres.

2 metres: 144.000 - 148.000MHz

Recently an increase in pirate activity has been noted in Australia with a variety of culprits being detected illegally using this allocation. Two metre transceivers are readily available both in base and portable configurations and, being moderately priced with such a broad spectrum to chose from, are sadly ideal for pirate operations.

Sydney in particular, is experiencing an increase in two metre piracy from its large Asian community. In recent months I have monitored Cantonese, Mandarin, Vietnamese, Lebanese and the Hindu language over various parts of the allocation, usually well clear of amateur repeaters and so on. When challenged, most disappear, but some of them simply ignore you altogether! Just the other week I logged a scrambler being used on one particular frequency. Not many amateurs do that, do they...?

When shopping in the Chinatown district of Sydney earlier this year I noted a group of Asian teenagers strolling along. Some had hand-helds clipped to their belts and looked very much like Yaesu and Icom two metre transceivers. Of course, they could have been licensed radio amateurs, but then again maybe not...

Conclusion

So there we are, and there's a lot more to report as we've only just touched the surface of the problem. We tend to notice illegal intrusions more when propagation is at its best, however, just because the propagation's been gone doesn't mean the pirates have gone too!

73 and good monitoring from VK2GJH.

***Editor's note**: Spectrum Piracy is certainly not a laughing matter. I guess we've all heard intruders from time to time, but maybe haven't realised that the signals were suspicious.*

We have to react promptly to keep unauthorised stations from invading our allocations. The IARU (International Amateur Radio Union) runs a monitoring service, whose intruder watch coordinator in Australia is Gordon Loveday, VK4KAL.

Your reports are welcomed, either by packet radio or post. The packet address for intruder reports is VK4KAL@VK4UN-1, or write to:
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Scanning the Scanner Market — Part 3

By Russell Bryant

Having catalogued most of the hand-held scanners, it is now the turn of the less popular, but nevertheless equally functional desktop and mobile receivers.

Prior to contemporaneous developments in component size and technology, the most widespread scanning radio receivers were desk-top units. Synthesised hand-helds were only in their infancy and were generally unreliable; they lacked sensitivity and, probably more importantly, selectivity. Their poor specifications became obvious when the scanner was connected to an external aerial or an antenna that exhibited high gain characteristics. Considerable interference and cross-modulation products were experienced by those who dared to use other than the supplied rubber duckie.

Advances in the research and development of surface-mount components, together with better shielding and a general advancement in construction methods, has meant that the previously humble portable now holds pride of place as far as sales are concerned. But no matter *how* popular hand-helds become, there will always be a place for a desk-top or mobile scanner, even in the collection of the most ambulatory of enthusiasts. Yes, even *I* own a desk-top...

With little more to say, let's get started with a run-down of 'who's who' in the non-portable scanning market. Here is a selection...

AOR AR-3000A

Until fairly recently the AR-3000A was king of the heap. It offered excellent performance specifications across its entire receiving range of 100 kHz to 2036 MHz. Together with all-mode reception, (AM, FM, WFM, SSB and CW), it is still a much sought-after unit.

For a base unit, however, channel capacity is on the conservative side with just 400 memories, divided into four banks of 100. Only one bank at a time can be scanned (without internal modification) and there is no provision for linking banks or enabling multi-bank scan.

The tuning steps are user-programmable, with any increment between 50 Hz and 999 kHz in 50 Hz steps able to be employed.

Frequencies are searched and channels scanned at a healthy 50 steps or channels per second. Depending on the band, sensitivity varies between 0.25µV to just over 0.35µV, which makes the AR-3000 one of most sensitive receivers around. Matched to this sensitivity is selectivity, and the AR-3000 is more than able to pull in signals missed by some other receivers.

Naturally enough, a receiver of this quality employs triple conversion, with the first IF being around 500 MHz, although I believe some image breakthrough is sometimes evident on HF. Channel lockout in scan and search, four priority channels, variable delay signal strength indicator and computer control are just some of the dozens of features that go to make the AR-3000 what it is: a true wide-band monitoring device.

This AOR is supplied with telescoping whip, plug pack power supply, car cigarette lead and manual. The AR-3000A is priced at around the $2000 mark.

AOR AR-5000

While its manufacturer may not have intended it, the AR-5000 has to a certain extent displaced the AR-3000 as the top-of-the-range all-mode, wide-band, multi-function receiver.

The AR-5000 has the widest frequency range of any receiver — portable or otherwise — that is currently available on the market. With coverage from 10 kHz to 2600 MHz, there isn't much left out. Likewise, tuning steps from 1Hz to 1MHz denies the user nothing, as every conceivable step rate, conventional or exotic can be entered.

By now, most will have noticed that all these 'high tech' receivers have as standard AM, FM, WFM, SSB and CW reception modes. The AR-5000 is no different, and its memory capacity is 1,000 channels, which is also now pretty much standard. That's very much an improvement over the AR-3000A's 400 slots...

The AR-5000 supports 10 banks of 100 channels each, with all data stored in an EEPROM. Both the search and scan rates are quoted as 50 steps or channels per second, which means the radio will take about 20 seconds without interruption to cover all 1000 memories. To keep tabs on what's happening, any one of five VFOs can be utilised.

By employing triple conversion based around IFs of 622.2 MHz, 10.7 MHz and 455 kHz, most images are well outside the receiving range of the radio. Across the entire frequency spread of the AR-5000, sensitivity is on average better than 0.35µV.

Almost right from the start, AOR made provision for computer control, or at least the potential for such, into its desktop units. Accordingly, the AR-5000 is set up with virtually all functions and parameters able to be set or altered through a PC.

Two antenna connectors (a standard SO239 and a low-loss N connector) grace the rear panel of the AR-5000 and, while that is not unique in itself, the receiver can be programmed to switch between aerials depending on the band or frequency received — something not seen before on a scanner.

To assist in monitoring shortwave signals, a switchable pre-amp is included in the package. Unlike its predecessors, the AR-5000 is clothed in a full metal case which goes some way to help shield sensitive RF areas from external interference.

Alphanumeric display, various scan and search programs, analogue signal strength meter as well as an optional CTCSS and DTMF decoder, make the AR-5000 a serious monitoring machine. A telescoping whip, power lead, handbook and AC/DC adaptor are included. The AOR AR-5000 can be purchased for around $2800.

Icom IC-R8500

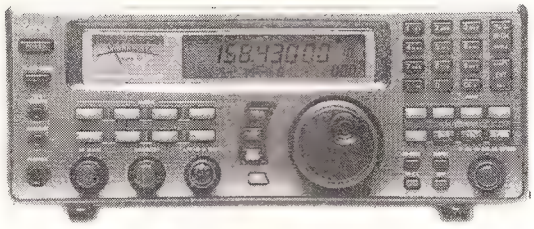
If prizes were awarded for weight, one would easily go to Icom's IC-R8500, for it weighs in at a hefty nine kilograms, making it by far the heaviest receiver in this bunch. That extra weight can be directly attributed to its overall size and the very substantial diecast chassis, which in part contributes to the radio's interference-free performance.

The Icom has continuous frequency coverage from 100 Hz to 1999.99999 MHz. It offers 1000 memory channels, variable reception modes, user-selectable tuning increments (10, 50 or 100Hz, plus 1, 2.5, 5, 9, 10, 12.5, 20, 25 or 100 kHz and 1 MHz — or, in fact, *any* rate between 0.5 and 199.5 kHz in 10 Hz steps), as well as delay and attenuator settings make for ease of programming and channel house keeping.

To search out new and unknown frequencies the IC-R8500 features 20 additional memory channels that can be programmed for just that purpose. There are five basic scan functions including Memory Scan, Memory Select Scan, Programmed Scan, Auto Memory Write Scan and Priority Scan. The LCD display is large and highly detailed with attenuator setting, delay duration, tuning step increment, memory name indicators, AGC (Automatic Gain Control), bank numbers, select channel indicator, frequency readout and filter band width indicators.

The rear panel of the IC-R8500 has 11 sockets and connectors, most notably a RS232-level DB25 connector for PC control. Frequency data, reception mode and bandwidth choice are some of the features able to be regulated via a computer.

Three antenna sockets are supplied, including a regular SO239, covering the frequencies up to 30 MHz, and above 30 MHz a high quality, low-loss N-type connector is used.



The IC-R8500 is also equipped with a 500 ohm connector for high impedance aerials. The other sockets and connectors are CI-V remote control jack, IF output jack, AGC jack, switched 13.8VDC output jack, external speaker jack and incoming DC jack.

The Icom is an excellent performer with good quality audio from the top-mounted speaker. Sensitivity on FM for frequencies between 30 MHz and 1,000 MHz is within acceptable range at 0.5µV, but could stand some improvement. A host of extras accompany the IC-R8500, including power supply, DC cable, telescoping aerial, various plugs, fuses and screws and, finally, a detailed user manual. It is priced under $4,000.

Uniden UBC144XLT

Basic is the only word to describe the UBC144XLT. Sixteen programmable channels and limited frequency coverage (66-88 MHz, 137-174 MHz and 406-512 MHz) make the UBC144XLT an ideal scanner for those who wish to monitor a single channel or a specific user.

Like its portable counterpart, the UBC60XLT, the UBC144XLT displays only a channel number. However, a review key is provided for the purposes of frequency readout, whereby each digit is displayed in order from MegaHertz to kiloHertz.

Priority and lockout are the only other functions performed by this VW of scanners. Double conversion means some images will be present, 21.7 MHz higher than the actual frequency.

Supplied with instruction booklet, AC adaptor and telescoping whip. However, at less than $150 it's undoubted good value for the first timer or as a back-up unit.

Uniden UBC760XLT

The Uniden UBC760XLT compact mobile is not new. In fact, it first sold in Australia nearly eight years ago. Why it still rates as a popular receiver is its size.

The UBC760XLT measures just 160 x 30 x 180 mm, and weighs around 400 grams, which makes it one of (if not *the*) smallest mobile or base scanners ever made.

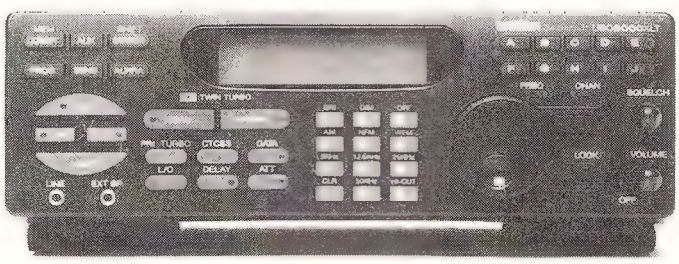
All in all, it is one of the best scanners for the car-bound monitor or as a neat desk-top unit. However, the UBC760XLT is not a 'super scanner'. Its memory capacity of 100 channels is divided into five banks of 20, which is just the right amount for easy operation while mobile. It also supports five user-programmable search banks, which can be accessed at the press of a single button. Services such as the police UHF can be entered into a bank and easily checked especially when cruising through new areas.

The UBC760XLT tunes the frequencies from VHF mid-band (in 15 kHz steps), VHF aircraft (by 25 kHz increments), VHF high band (15 kHz steps), UHF bands (in 12.5 kHz steps; the fourth digit is not displayed) and 800 MHz, in increments of 12.5 kHz, but again with no fourth digit).

The volume and squelch pots are concentrically mounted in an effort to conserve space, however the volume knob is bulky enough so that it can be adjusted without tampering with the mute.

The basic LCD display shows channel number, frequency received, memory bank location, channel lockout and priority status. For low light conditions or at night the display is permanently illuminated with a reddish/orange glow.

There is no provision to switch it off.



The main function buttons of SCAN, MANUAL, PRIORITY, and HOLD are large enough to be operated whilst driving. The remaining keys, such as the numerical buttons, are smaller and should not be used while motoring. As a base unit this should not present a problem. All keys are black, with their titles and functions highlighted in white.

The UBC760XLT uses the now-standard BNC antenna connector. As far as specification go, the UBC760XLT scans at 15 channels per second, delivers two watts of audio from its bottom-mounted speaker. It has a sensitivity of 0.3µV at 70 MHz, 0.6µV at 120 MHz, 0.4µV at 160 MHz and UHF, with 0.8µV at 800 MHz. Accessories supplied with the Uniden UBC760XLT include DC auto power cord, AC/DC plug pack supply, mobile mounting bracket and hardware, telescoping aerial and user pamphlet. The Uniden UBC760XLT has a price tag of $299.

Uniden UBC9000XLT

The UBC9000XLT was Uniden's attempt to produce a 'communications receiver' type scanner. It has, basically, succeeded. The UBC9000XLT offers almost continuous coverage from 25 MHz to 1300 MHz. The gap between 550 MHz and 760 MHz is the only portion missing, which is of little concern as this area is occupied by TV carriers.

Five hundred channels, divided into 20 banks of 25 channels each, make for convenient frequency management. To assist in this task, up to 250 channels can be alphanumerically tagged with a 16-digit label. Three user-selectable search increments are provided, they being 5, 12.5 and 25 kHz. (There is, in fact, a fourth step rate in the guise of 30 kHz, which is fixed to a certain portion of the 800 MHz band. It can not be used on any other band.)

Three default reception modes are also incorporated into the UBC9000XLT, being FM, AM and wide FM for broadcast band listening. Even though the radio defaults to a particular reception mode when a frequency from within predetermined limits is entered into a memory, it can be overridden at the touch of a couple of buttons.

Rather than the usual single priority channel, the UBC9000XLT has 10 of them, with each sampled in order to provide instant access to the action. However, if there is one thing the UBC9000XLT lacks, it's search banks. The single search facility is simply not enough in a receiver of this type.

Amongst its other nifty features, the UBC9000XLT sorts the memory data into frequency order, thereby increasing the speed to a hot 100 channels per second. If you opt to search out the action using the 5 kHz step, the radio trucks along at an amazing 300 channels per second. What's more it *works*, without missing a single transmission.

Using the Memory Count feature, the number of transmissions that occur on a nominated frequency can be mapped, thereby providing an indication as to its usage, without actually sitting in front of the radio all day. Delay and attenuation can be applied to individual channels — much better than the universal approach.

I know I said I would leave out opinion, however in this case I will offer it anyway. In my estimation, what sets the UBC9000XLT apart from its competition is the provision for CTCSS decoding. This makes a good radio even better, cutting out images (not that there are a lot because of the use of triple conversion), interference and the annoying beeps and burps that can be found on some transmissions.

An AC power adaptor, telescoping BNC aerial and handbook come with the Uniden UBC9000XLT. Priced at $499.

That concludes this 'state of the market' look at scanning receivers. Back to the normal format next month. Until then, have fun with your scanning!

Gone Tropo

from Chris Davis, VK1DO

VHF activity, due to potentially improved conditions, comes into its own over the next few months. Warmer days, massive ground and air temperature differentials at dawn and dusk produce some exciting ducting, supporting contacts over vast distances between stations that spend much of the year convinced that their stations might be broken or the feedline chewed in half. Late spring through summer and autumn are coincidentally the more pleasant times to contemplate venturing out into the field, to an elevated vantage point with the prospect of camping overnight being somewhat more pleasant compared with winter chills and our natural tendency toward lethargy.

The pattern of VHF propagation over the past few years has led many people with a reasonable amount of experience to begin to question the factors apart from diurnal and seasonal. Perhaps the reliance of VHF propagation on tropospheric modes is only a *part* of the story. Maybe there is some influence from ionospheric factors...

"... There are factors ... such as: the propagation always improves if you are not in the shack ..."

VHF propagation is an area of research that has not yet revealed all its secrets. Unlike HF propagation, line of sight and even space communications, the factors that determine VHF propagation are many, and each new theory begins a new range of speculation inevitably able to undermine the established norms.

Without getting involved in a detailed discussion of sporadic E layer propagation, there has recently been a two-part series in the ARRL's excellent *QST* magazine written by one of the world's most well-respected authors on matters VHF *(who just happens to be an Australian... Ed.)* discussing the connection between meteor showers and sporadic E.

Earlier writings and indeed ongoing monitoring at various airports connects sporadic E layers presence with wind sheer effects, and so on. Do you remember the predictions of just what a phenomenal summer season we were supposed to have, based on the northern hemisphere? We had one of the worst.

Like the saying along the lines of "...the older I get, the less I know...", anyone involved in VHF propagation progressively becomes more cautious in their pronouncements and, instead of using the word 'definitely' to preface their predictions, tend to add the insurance of the word, 'ordinarily'.

To get out of bed in anxious anticipation of seeing a still, mild morning and thus hoping for excellent lift, is a process that no longer excites me as the reliance upon superficial conditions is tempered with experience and some history of disappointment.

Some of the worst days, even during winter, might support the most impressive propagation and indeed text-book weather maps that really ought to render coast-to-coast contacts, might produce the most ordinary of days.

This art of prediction, while strictly speaking ostensibly a science, has started to take on the inconsistency of predicting the weather.

Yes, meteorology and our beloved propagation have a great deal of similarity — in fact, not just similar characteristics but of course many same basal causes.

Have you noticed how unreliable the weather forecasters have become? It doesn't make sense does it? All the computer power of the age, all the satellites and hilltop anemometers... and they are *still* confounded.

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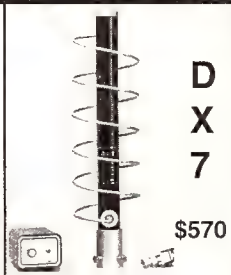

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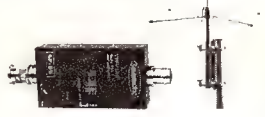

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Gone Tropo

from Chris Davis, VK1DO

The two words that have been bandied about in the form of a universal panacea to explain the state of the weather is the **El Nino effect**. Ironically, although some parts of the modern media give rise to the impression that this effect is a recent phenomenon, there is considerable evidence that the effect has been with us for most of this century. However, the sophisticated analysis of coinciding factors has only brought it to light relatively recently.

Simply put, the effect is most obvious in its impact on rainfall. The coastal areas are unlikely to be profoundly influenced as there are regular events which guarantee that the massive amount of moist air that accumulate above the water will regularly be drawn in and fall as rain on the coastal regions. Unfortunately, the greatest effect is on the inland regions, particularly central NSW and, most prominently, inland areas of Victoria.

The term *El Nino* emerged when a deleterious weather pattern was noted on the West coast of South America resulting in warm waters killing the anchovies, the main living of the fishing-based locals. The phenomenon occurred around Christmas time, thus the words El Nino which, translated, mean Christ Child or Boy Child.

What on earth has all this got to do with propagation? Well, to quote the lovely line from Monty Python's spoof of the election night, "...pretty much as I predicted, except I was wrong...". Our modern forecasters have fallen foul of being forced into very abridged weather bulletins. Clearly, they do have much more information at their disposal, however, we still want bite-sized chunks of weather prediction. Despite the fashionability of suggesting that the meteorologists should be sacked for getting it wrong so often, I think we are prone to forgetting just how remarkable some of the longer range forecasting has become and just how often they get if astonishingly right, down to the temperature, the humidity, the wind direction and so forth. I suppose that the accurate forecasts are inevitably forgotten...

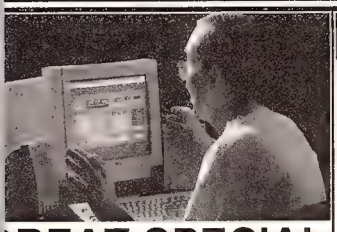
If their forecasts were allowed to be exhaustively detailed, it would be 25 minutes of weather and five minutes of news. Possibly a very good idea, based on the ghastly way in which the news infiltrates our homes, however not what the proletariat prefer! The link between the weather and our capacity to predict propagation is extremely tenuous, as there appear to be more levels in the algorithm that determines weather.

"... To get out of bed in anxious anticipation of seeing a still, mild morning ... is a process that no longer excites me ..."

Many of us have cut out weather maps which in retrospect, are textbook cases of supporting why propagation took place — somewhat a case of being wise in hindsight. Predicting it is somewhat more difficult...

There are certainly factors which seem to have been reliable, such as... the propagation always improves if you are not in the shack; taking down a large array for maintenance usually guarantees that the bands will open up; during a field day, the propagation is always better the following weekend, and so forth.

All cynicism aside, there is no substitute for good old-fashioned activity. We will never know just *how* much favourable propagation exists, with such a sparse and spread-out population of amateurs within a landmass like Australia. Suffice to say, the more awareness that we have about early morning and evening openings, the greater the chance of success.



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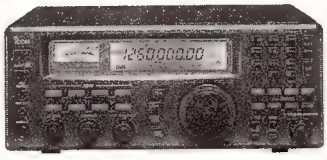

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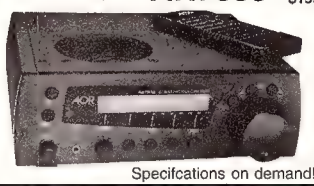

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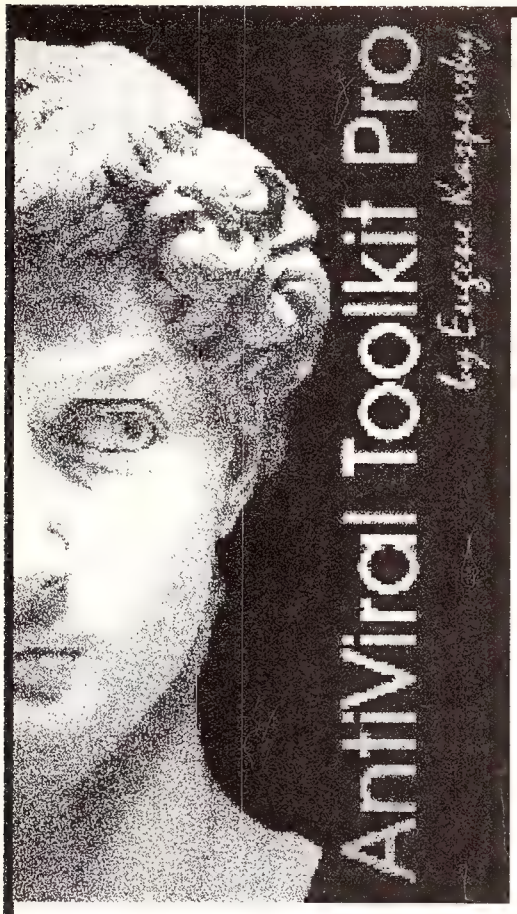

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DX & BAND REPORT

Compiled by Jim Smith, VK9NS
PO Box 90, Norfolk Island,
South Pacific 2899

A report from the UK...

I've been back in the UK for a couple of weeks now and it seems strange to be so far away from Norfolk Island and the usual ear to the ground of my amateur radio life of VK9NS. I attended the 1997 RSGB HF/IOTA Convention held in the Windsor area with my son Bruce, G3HSR. We went up on the Saturday morning as neither of us had made any arrangements to go to the festivities of the Friday evening — things like the DX Dinner and so on.

Nevertheless, Saturday was a very full day with plenty of 'Things to Do' and we opted for starters to attend the DX session and the IOTA session. What else indeed?!!

The DXCC session was under the guidance of Bill, K5FUV, and it was interesting to get an insight into the world of DXCC in the year 2000. There are numerous suggestions for changes under review which I mentioned in the column last issue. It seems to me that the coming century it is to be the world of the multi-band and multi-mode awards which, roughly translated, means that when the P5 station comes up then by all means work them on every band (except 30M), on every mode such as RTTY, SSB and CW just to prove what a great DXer one is.

Of course, I am a bit old fashioned in my outlook... The idea that two or three QSOs were enough with those 'high in the ladder' DX stations. Who needs 18 QSOs with many of the DX locations which are rare, tough to get to, tough to activate and so on? However I guess that if you do have a multi-operator DXpedition team to this or that location then I suppose one must give the operators something to do.

It may sound a bit 'edgy', but you have to see what goes on in the name of DXing these days with a good packet system in place. In fact, the better the packet system the less *you*, dear DXers, have to do. The fact is that there are a whole bunch of DXers out there who rely more or less absolutely on the efforts of what seems to me to be a tiny minority, those who spot the DX they have just worked.

Maybe being tied to Norfolk Island keeps me in the past in some sense but then I have always prided myself in keeping up to date with DX news... who is coming up, when, how, and so on. It is called being active on the band and usually doing a great deal more listening than transmitting. It is why in writing the DX or IOTA column it is based on what has actually been worked or heard. Of course there is a need to check an address, check who is manager and so on, and in this case sometimes this depends on others. But I like to think that this DX outlet or that DXer has depended on me to supply this answer or that answer to some DX question or another...

Today, being back in civilisation — and I mean specifically the world of computers, the Internet, E-mail and packet radio systems, DXing is a completely different world. Of course there is a lot of input to the packet systems and this input is instantaneous. Set up your 'wake up call' for those islands, DX stations, prefixes, band countries which one needs, and Bingo! in an active system you will be alerted by your choice of melodies or whatever. A rush into, out to, up to the shack are there on your computer screen is what you always wanted P5AA on 160M, RTTY with frequency etc. Easy??? Of *course* it's easy!!!

Being on the air from the UK also brought back many memories, especially with DX activities like the K7K, Kure Island operation. It reminded me of just how *hard* it was to work some of these Pacific areas from the UK. They can be very difficult to work, and it took Bruce, G3HSR some time to get them in the log on SSB and CW — the two modes which he likes to have a DXCC claim. But the difference here is that a DXpedition generally *does* try to work all areas (as we all know) and once they were 'looking for Europe' then at least one is in with a chance.

Then there are other things which brought back memories. It was great to hear the VKs and the ZL stations on the great 'long path' openings of our early morning in Europe. I listened around and heard many well-known VK stations still working their usual skeds with G-land, and often with great signals. I worked Paul, VK3AJJ and John, VK6JJ with solid two-way QSOs and will try to work a few more before I start heading for home. I've also had a few skeds with Kirsti, VK9NL and it is always interesting to hear signals peak and gradually fade away and that's it for this morning.

However, I guess you have all been in the position of using someone else's station. Don't know how you feel but I am never completely at ease. What if the linear blows up, the antenna falls down, or the rig finally quits? Did *I* do that??? Damn... So I operate with a certain amount of unease although knowing that Bruce for example would not blame his father if his linear did fail whilst I was operating — or *would* he?? I remember a US visitor to my P29JS shack in PNG. He was a very keen operator and made many QSOs during the few hours of his visit. Problem was that he left me with a blown-up linear and a keyer that no longer worked. Of course he was very upset and sorry but that was it. No letter or note a few weeks later as to how things were going. Linear fixed, Keyer fixed?? Nothing.

UK amateur radio licensing

I was very interested in the licensing structure in the UK and the present system used to actually issue an amateur radio licence. The Radio Licensing Centre is run by Subscription Services Ltd (SSL), which is a subsidiary of the Post Office Group. SSL is contracted to the Radiocommunications Agency (RA) to distribute Amateur and Citizens' Band Radio licences on its behalf. The RA is an executive agency of the Department of Trade and Industry (DTI) which is responsible for all aspects of radio licensing.

However, what caught my eye and interest was a leaflet called Code of Practise (Licensing Centre) which laid out, in an easily read format, Our Commitments — the intention to provide a professional service with a number of quality assurance measures built in.

Reading the various items, it became apparent to me that the SSL appeared to mean what it said. It promises to be courteous, prompt in response to inquiries, send reminders for licence renewal, handle new applications, process and handle payments and so on. It promises to phone you back if you leave a message on its answer machine. It will do its best to see that, as far as possible, the same person sees your request through to its conclusion. There is a help desk number manned by 'fully-trained staff' and every operator is linked to the computer

....☞

Briefly noted...

5A1A	Libya	20 M SSB	1223 UTC	
5R8FK	Madagascar	15 M CW	0927 UTC	
6W1AE	Senegal	12 M SSB	1745 UTC	
CN8CY	Morocco	20 M SSB	0845 UTC	QSL DL2EAD
D44BC	Cape Verde	10 M SSB	1718 UTC	QSL CBA
D44BC	Cape Verde	12 M SSB	1712 UTC	QSL CBA
FK8GM	New Caledonia	17 M SSB	0812 UTC	
FK8HC	New Caledonia	20 M SSB	0841 UTC	QSL CBA
TA4/DL1XA	Turkey	17 M SSB	1000 UTC	QSL DL1XA
ZA1AM	Albania	40 M CW	1945 UTC	
ZA1MH	Albania	40 M SSB	1704 UTC	
ZD7MY	St Helena	12 M SSB	1740 UTC	

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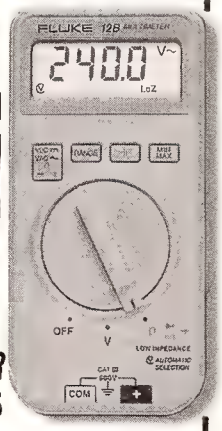

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DX & BAND REPORT

Compiled by Jim Smith, VK9NS
PO Box 90, Norfolk Island,
South Pacific 2899

database giving instant access to your records and all that sort of stuff.

The licensing centre promises to process a licence application within five working days with the proviso, of course, that all the paperwork is in order, that payment for the licence is received, and so on.

I must confess that I have been lucky over the years with amateur radio licences. Generally speaking, I follow the system, have all the required application forms, documents, payment etc and usually the answer is Bingo.

So what would *you* do? My inclination was to test the system and I made a quick telephone call to the inquiry desk and was immediately connected to the licensing staff. I outlined my situation — basically that I had a current VK Full Call licence, a current Extra Class USA licence and a current VU Licence. It seemed that I qualified immediately for a reciprocal UK licence. (I did not mention that I had been the holder of a G Licence which had been relinquished in favour of my son Bruce, some years before.)

For a quick address over the phone I gave care of G3HSR — which, by the way, was quickly checked on their database . Would you mind giving me the first line of your son's address Mr Smith? (I thought that was a rather nice little spot check!) and it was then promised that an application would be in the next mail.

Now one *has* to be honest — I need a G licence like a hole in the head but was impressed by the courtesy and promptness in dealing with my request. However in the meantime it was realised that I did not have the original of my VK9NS licence with me, only a photocopy. SSL needs the ORIGINAL of any licence or material to be used to support the licence application. So I opted to use my US Licence WR1Z but I stress that my VK9 licence *was* acceptable at SSL.

The application form arrived promptly and was completed and returned in the afternoon mail. I don't know how you are where the mail system is concerned, but I felt happier using Recorded Delivery, mainly due to sending my original WR1Z licence through the post. Its main effect was to slow its delivery by about one whole day but arrive it did! Did I mention money? No, in any case payment was enclosed which was about A$40 for one year.

In due course, since SSL had scored 100 per cent marks so far, I decided on a telephone inquiry like the polite 'what has happened to my application?' routine. True to their word, a fast courteous connection was made to the person dealing with my application, and we started talking callsigns.

By this time I realised that the G prefix was no more and that an MØ prefix call would be issued. Since calls are issued in strict order (just like they have always been, I guess) my call would be MØBIS. However I was told that if a particular call was requested it would be reserved (at no charge, by the way) and issued as soon as it became available — that is next in line of issue sequence. So I decided to opt for MØBJS which has all my initials — I could have requested MØJBS but at around five or six licences issued per week it would have taken quite some time to reach there.

So it seems that in a few weeks time I will be MØBJS... and already my WR1Z licence and acknowledgment has been returned safely to me and I remain impressed.

So if you want a Licence for a full or short term visit to the UK then SSL is the place to contact. I can promise that you will have prompt, courteous service just as they said and just about where we started.

As an aside, I have often mentioned that in my view the Australian licensing system was very courteous and very efficient. I have never had any problems over licensing with SMA or whoever was in charge of the system in the past.

Nevertheless, it was refreshing to read something along the lines of 'We care — we will do our best for you' and so on. Times have changed and in this case in a very nice way. Long live courtesy and a bit of service.

Okay I hear you out there, 'What about some DX news?' Let's head out and about on the bands, and it is always interesting to check the amateur radio bands in other areas of the world...

Thailand, HS

It was nice to hear Phil, HSØ/G4JMB coming through on 20M SSB at around 1500 UTC, and he was busy with a pile-up. Last time I spoke to Phil he was waiting for the issue of an HS callsign.

Egypt, SU

It was interesting to hear Ahmed, SU3AM with a very loud signal on 20M SSB at 1500 UTC and his location brought of Port Said brought back a few memories hi.

Bahrain, A9

David, A92BE was a great signal on 15M SSB at 1531 UTC. I have contacted David on several occasions recently from Norfolk Island; he seems to be very active.
QSL Route:
PO Box 1976, Manama, Bahrain.

Myotte, FH

FH, Mayotte seems to be quite a rare country over our way in the Pacific area. FH/DJ2BN was good copy on 30M CW at 1543. He had quite a pile-up.
QSL Route: **DJ2BN**

Chad, TT8ZB

I think most of the TT operations are okay these days with DXCC. TT8ZB was good copy here on 15M CW at 1723 UTC. A good operator with a big pile-up... **QSL Route**: IK3ERN Also TT8KM has been very active on 15M CW. I heard him at 1303 UTC.
QSL Route: F6FNU, direct only via CBA.

The Gambia, C5

I find that C5 is not a tough area from Norfolk, as it is near our antipodes. C56/JA1OEM was a very loud signal on 17M SSB at 1743 UTC.
QSL Route: **JA1OEM**

Svalbard, JW

JW5NM has been very active recently and often very loud over our way but it was a change to hear Matt here 20dB over S9 on 20M SSB at 1830 UTC. Meanwhile, down on the CW end, JW1CCA was also a good signal a few minutes later at 1849UTC.
QSL Route: see notes

New Zealand, ZL

I took the trouble on a couple of occasions to listen to that dreaded (in VK-land) 80M spot known as the DX window. It was good to hear several of the usual gang in there at around 0700/0800 UTC including Roy, ZL4BO and others.

Saudi Arabia, 7Z

7Z5OO was good copy here on 15M CW at 1337 UTC. I think I mentioned in my last column that Art, N2AU had taken over QSLing.
QSL Route: **N2AU**

Also, a few days later, **HZ1CCA** was good copy on 15M SSB at 1438 UTC with a large pile-up.
QSL Route: **IK7JTF**

Somalia, T5

I suspect that quite a few still need T5, Somalia but again, right off the top of my head, I cannot say which Somalia operations are okay these days. However we all know that one operation by a VK operator is *not* okay at DXCC.

Anyway, T5EC was on the other evening on 20M SSB at 2102 UTC and he was very busy.
QSL Route: **DLØMAR**

Oman, A4

It was mentioned in my last column that Omani stations were celebrating the 25th anniversary of their national society, ROARS, by the addition of SJ (Silver Jubilee) after their callsigns.

Both A41LZ/SJ and A45XR/SJ have been quite active, and both were on 20M SSB around the 2100/2130 UTC slot. Chris A45XR/SJ had a strong signal here.
QSL Route for Chris, **A45XR**:
PO Box 2038, CPO 111, Oman.

Note that all A4 stations are okay via the ROARS QSL Bureau.

Jordan, JY

Bob, JY8XY was on 15M SSB the other afternoon with quite good signals although he was hearing the southern Europeans much better than G-land.
QSL Route: **W9XY**

Georgia, 4L

Perhaps it is unusual skip, but I have heard several 4L stations in recent days.
4L5O was very loud here on 15M SSB at 0835 UTC.
4L8DX was also good copy on 15M SSB at 0845 UTC.
4LØCR had a good signal on 15M SSB at 0900 UTC.
4L1BW, Sergio, was on 15M SSB at 0934 UTC.
QSL Routes:
4L5O: **TA7A**
4LØCR: **IK7JTF**

Kuwait, 9K

I seem to remember working 9K2RR on CW from Norfolk Island recently, and he was quite a good signal on 30M CW in the UK the other morning at 0930 UTC.
QSL Route: see notes.

Malawi, 7Q

Ron, 7Q7RM has been a great signal on my long path back on Norfolk Island and it was nice to hear him on 10M SSB the other afternoon. These north/south signals (in terms of Europe) to Africa can be very interesting and its nice to hear 10M in working shape.
QSL Route: GØIAS

Macquarie Island

As I write this, Tom, VKØTS is nearing the end of his stay on the island and I have been in touch with him by email from the UK. He mentioned that his QSO total is now around the 2,000 mark, so I guess a few more DXers will be happy. Macquarie Island has always been a tough one and always dependent on whether there is an amateur within the ANARE group. It seems unlikely that there will be a radio amateur with the next ANARE group which will winter there in 1998.

I was also pleased to hear from Tom that he was going to use VKØANRE callsign on Macquarie Island from October 25 to 31.

Just before leaving Norfolk I suggested to Tom that he try to get the use of the **VIØANRE** call, as it seemed to me to be a nonsense to use the VIØ prefix on mainland Australia. Radio amateurs working VIØANRE naturally think that they are working Antarctica or sub-Antarctic eg Heard or Macquarie. The 50th Anniversary of ANARE is important, and it in a sense it all started on Macquarie and Heard, so it will be nice to hear VKØANRE active.

QSL Route notes...

As you all know, I try to give accurate QSL information for each station mentioned in this column. However, my resources are very restricted at the moment so in this and possibly the next column, QSL info will be limited. I hope you will understand.

So that is the column for this issue and I am indebted to Bruce, G3HSR for the use of his rig and Packet system for much of the column.

I will be back on Norfolk before Christmas and New Year come along, so hopefully we can exchange greetings on the band at the appropriate time. I'll reserve my seasonal greetings for the next issue, which comes out on Christmas Eve.

It is interesting to note the improvements in general band conditions and to hear and work stations located in our usual Pacific area from the other side of the world.

73 from Jim, VK9NS / MØBJS

....☞

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ISLANDS ON THE AIR (IOTA)

By Jim Smith, VK9NS

Greetings from the UK where I am having a short vacation before returning to Norfolk Island via India, Bangkok and Bangladesh.

I arrived in England a couple of days before the 1997 RSGB HF/IOTA Convention and my son Bruce, G3HSR and myself visited it and spent all day Saturday at the convention location. On my last visit to the convention it had been combined with the annual IOTA Convention, so this year I noticed that things were much quieter... not quite so many people around. Nevertheless I enjoyed the Convention atmosphere and meeting many old friends who are DXers and many also interested in the RSGB IOTA program.

The list of activity in this issue is, of course, quite different to the stations worked from Norfolk Island. European IOTA stations are much more prevalent on the bands and correspondingly much easier to work. Like every other location in the world, much depends on propagation — but stations like Dick SV8/DL8MCA on EU-072 was very loud and easily worked.

Back home on Norfolk Island a short time back I spent four days chasing him and finally worked him for a new IOTA number with signals 3X3 both ways... just goes to show. It is not often I hear ZD7, ZD8 and ZD9 within a few days back home on Norfolk, yet that is what happened here the other day, and on that North/South path the stations were easily contacted after some calling in the pile-up.

Then again, the European QRM is also very high, and it is often hard to find a clear spot on the band. I was lucky, and was able to work Kirsti, VK9NL long path on 20M with reasonable signals each way. However, contacting the Kure Island, K7K DXpedition was quite hard, although young Bruce managed both a CW and SSB QSO with them. Over the pole into the Pacific is always a difficult path from many of the European areas like G-land. It is noticeable, though, that the more northerly stations in SM, OH and LA seem to have an easier time with QSOs into the Pacific.

Africa seems to be very easy to contact from here, and once propagation opens up to the Indian Ocean area or even Asia (like Indonesia / Malaysia etc) again, signals can be very strong and again fairly easy to work. I had one very good QSO with JA5AUC on 17M, so that was a nice surprise for me.

QSL info

Please be careful with my QSL Info for this column as I do not have my usual database of QSL managers, addresses and the like. I always try to give the latest address of all IOTA stations listed in this column, so please accept my apologies for this issue of the IOTA column and probably the December issue as well. I expect to be back on Norfolk Island in early December, but will write my report before leaving for home.

YB9COD: Komang, Negara KM7, Bali Island, Indonesia 82261.

General

One good thing for me was being able to have *my* IOTA QSL cards checked at the RSGB Convention by one of the IOTA check point stations. Normally I send them to Roger, G3KMA or Martin, G3ZAY. So this was quite convenient for me, and all the IOTA cards which have been received since my last update have now been checked and accepted.

One very noticeable change to me after so many years away from the UK is the increased use of the **Packet Radio** system. It seemed to me that one just kept an eye on the 'Cluster', and as soon as something of interest is spotted then an immediate pile-up is started. Of course, *someone* must be putting the information on the cluster in the first place, but to me it was all so easy with no need to spend time tuning around. Just check what was on the bands by depending on the Packet Cluster to lead you to the IOTA station or the IOTA station...

Bruce also has his packet system set up with a 'Wake Up Call' (or Alert) if something is spotted which he needs — perhaps a DX station or perhaps a needed IOTA Number and so on. It all became a bit too easy for me, but then my life as a radio amateur on Norfolk Island is quite different to that of a fellow amateur in the UK and other countries. We do not have Packet and we do not have the Internet, E-mail or any of that high-tech stuff. So maybe we just remain a bit old-fashioned in our operating ways.

The trouble is if you don't look around the bands yourself you are depending on others to keep the packet system updated. Just a different way of life really...

RSGB Convention

We both attended the IOTA and the DXCC sessions at the HF convention and it was nice to be brought up to date with the proposed ideas to the DXCC program for the year 2000. Bill, K5FUV, the DXCC manager, gave an excellent talk and presentation which was well attended.

In the case of IOTA, Neville, G3NUG gave a nice talk on several areas of the IOTA program which was followed by questions and answers.

One of the areas discussed was the situation where an island is also a reserved or protected island requiring some kind of special permission to be allowed on the island for amateur radio purposes — for example, IOTA.

My impression was that IOTA felt it should generate a set of guidelines to be followed by any DXpedition to such an island for IOTA. By that I mean in a conservation sense, suggestions of things to do to make sure there was a minimal intrusion to the habitat, wildlife, flora etc of the island being activated.

It seemed to me that, in a way, such material from IOTA would be a duplication of what should be in place already. In other words, if one has received special permission to operate from Island X, then the country and its authorisation mechanism should have laid down the rules for the visit. It seemed to me to be an intrusion to any such authority to write some set of guidelines for IOTA DXpeditioners to follow.

However, to be honest, there are some horrendous stories of just how some island places have been left like a local rubbish dump. Conway Reef, Mellish Reef and a few other places have their pile of junk left by radio amateurs.

The problem is who is going to check a site to find out whether things have been left in a reasonable state ready for the next visitor? Still maybe it is a good idea to have some general comment in the IOTA Directory regarding what constitutes good and friendly behaviour in the name of goodwill and environmental matters. What do *you* think?

There was some good discussion on alleged QSLing problems with some of the IOTA stations. Most of the discussion was around bureau QSL cards but it failed to note that many radio amateurs are not members of their national societies. So a QSL sent out via your own QSL bureau may end up in the trash can at the other end.

Most societies do not handle incoming bureau QSLs for non-members.

Apart from that, writing this column is, of course, harder than normal due to my present situation of travelling around. It might be that next issue will be slightly different as I hope to be in India before the next column is due. We shall see what happens. However, I have a feeling that you will understand my problems at the moment, hi.

So, for the moment, best wishes from the UK and I wish you happy island hunting.

73 from Jim, VK9NS / MØBJS.

Baudwalking: A Look Back...

June 1997 to November 1997

By Thomas R. Sundstrom, W2XQ, trs@trsc.com

It has been two years since Tom took over the Baudwalking column, and this is his fourth semi-annual summary. We have re-checked the sites herein and deleted a few that are no longer in existence; a few entries below have been updated with new addresses.

The first column is the name of the Web site or subject. The second column is the Internet address. The third column in the listings below are the month and year of publication. If you missed an issue, back issues of Radio and Communications may be ordered from (03) 9567 4200.

Amateur Radio

2m FM USA repeater directory	http://www.artscipub.com/repmain.html	Sep 97
Amateur radio mailing lists and links	http://www.qsl.net/k7on/	
	http://pw2.netcom.com/~ac6v/pageae.html	Aug 97
Andrew Davis' ham radio page	http://www.ozemail.com.au/~andrewd/hamradio/	Jul 97
BeaconClock	http://www.mutadv.com/kawin/pages/bcnclk.htm	Nov 97
Bencher	http://www.bencher.com/	Oct 97
Ham Radio & More Show	http://www.goodnet.com/~lenwink/hrm.htm	Jul 97
Harry Helms, AA6FN	http://users.abac.com/harryh/	Sep 97
HF Beacon Schedule	http://www.ncdxf.com	Nov 97
International Radio	http://www.qth.com/inrad/	Oct 97
Introduction to SSTV	http://members.icanect.net/~rlehman/	Nov 97
Kachina Communications	http://www.kachina-az.com/	Oct 97
KB8TNQ Ultimate Amateur Radio Page	http://www.kb8uyz.com/kb8tnq/	Nov 97
Liga Brasileira de Radioamadores-RJ	http://www.online.com.br/wcenter/py1aa.html	Jun 97
Newsline	http://www.arnewsline.org	
	http://www.tapr.org/newsline/	Aug 97
Russian amateurs, links to pages	http://www.stack.serpukhov.su/~victor/hamradio/	Sep 97
Satellite pass predictions	http://acsprod1.acs.ncsu.edu/scripts/HamRadio/sattrack	Sep 97
W95SSTV SSTV software	http://www.wolfe.net/~jlbarber/sstv.htm	Nov 97

Broadcasters

Adventist World Radio	http://www.awr.org/	Jun 97
Bayrak Radio Television	http://www.emu.edu.tr/~brt	Oct 97
BBC Radio Cleveland	http://www.bbc-ne-cu.co.uk/cl-int-n.htm	Sep 97
BBC Radio Cumbria	http://www.bbc-ne-cu.co.uk/cu.htm	Sep 97
BBC Radio Lincolnshire	http://www.bbclincs.demon.co.uk/	8/9 97
BBC Radio Newcastle	http://www.bbc-ne-cu.co.uk/ne.htm	Sep 97
BBC Radio York	http://www.bbc-ne-cu.co.uk/yo.htm	Sep 97
Central FM, Spain	http://www.computronx.com/centralfm/	Aug 97
CFRB	http://www.trends.ca/~iain/CFRB/	Jun 97
China Radio International	http://pw2.netcom.com/~jleq/cri1.htm	Sep 97
FEBA Radio	http://www.feba.org.uk/	Jun 97
Islamic Republic of Iran Broadcasting	http://194.126.32.20/irib/index.htm	Aug 97
KNLS	http://www.knls.org	Oct 97
KTWR, Trans World Radio Guam	http://www.gospelcom.net/twr/twr_index.htm	
	http://www.guam.net/pub/twr/	Sep 97
Lithuanian Radio and Television	http://www.lrtv.lt/	Jul 97
Monitor Radio Shortwave	http://www.csmonitor.com/monitor_radio/shortwave_schedule.html	Oct 97
Polskie Radio	http://apollo.radio.com.pl/	Oct 97
Radio Bop, South Africa	http://www.bop.co.za	Oct 97
Radio Cairo	http://www.sis.gov.eg/vidaudio/html/audiofm.htm	Oct 97
Radio Casablanca	http://www.maroc.net/rc/	Oct 97
Radio Kuridat Nigeria	http://www.sentech.co.za/nigeria.html	Sep 97
Radio Kuwait	http://www.radiokuwait.org	Oct 97
Radio Nadeco	http://www.nadeco.org/radioinfo.htm	Sep 97
Radio New Zealand domestic programming	http://www.rnz.co.nz/	Jul 97
Radio New Zealand International	http://www.actrix.gen.nz/biz/rnzi/	Jul 97
Radio Norway	http://www.nrk.no/radionorway/	Aug 97
Radio Oman	http://www.oman-tv.gov.om	Oct 97
Radio Programas del Peru, Lima	http://www.rpp.com.pe	Jul 97
Radio Slovakia International	http://www.radio.sk/rsi.html	Aug 97
Radio Tampa, Japan	http://www.softbank.co.jp/tampa/	Sep 97
Radio Vilnius	http://daugenis.mch.mii.lt/programe.htm	Jul 97
United Nations TV and Radio	http://www.internetbroadcast.com/un.htm	Nov 97
Voice of Free Nigeria	http://pw2.netcom.com/~fnm/	Sep 97
Voice of Palestine	http://www.bailasan.com/pinc/voice.htm	Oct 97
WEWN	http://www.ewtn.com/WEWN/radio1.htm	Jun 97
World Music Radio, Denmark	http://www.wmr.dk/	Sep 97
WWCR	http://www.wwcr.com/	Jul 97

Broadcasting

AFN Radio & TV News	http://www.geocities.com/TelevisionCity/4622/afnmain2.html	Oct 97
Broadcast Station Location Page	http://www.jagunet.com/~kodis/station.html	Jun 97
Caribbean Broadcasting Union	http://caribunion.com/	Aug 97
Carocol Network, Colombia	http://www.caracol.com.co/	Oct 97
Christian Radio station directory	http://www.users.zetnet.co.uk/rdixon/christrd.htm	Sep 97
French-speaking domestic Eu stns with audio	http://www.comfm.fr	Jun 97
George Jacobs & Associates	http://www.gjainc.com/	Jun 97
Ituner (Eastern European stations with audio)	http://www.ituner.com/ee.htm	Jun 97
Lithuanian broadcast directory	http://www.is.lt/ratekona/11-r-e.htm	Jul 97
National Association of Shortwave Broadcasters	http://www.shortwave.org/	Oct 97
Radio Havana News in English	http://www.crocker.com/~acacia/havana.html	Jul 97
Time Stands Still for the Voice of Russia	http://www.spb.su/times/264-265/time-stands.html	Aug 97
Zona Latina	http://www.zonalatina.com/Radio.htm	Jul 97

Miscellaneous

Astronomy Clock	http://users.aol.com/ericb98398/	Sep 97
CADi-Search	http://www.spiraweb.com/cadisearch	Oct 97
CB Radio Page	http://www.labyrinth.net.au/~roity/cbradio	Jun 97
Communications Research Laboratory	http://www.crl.go.jp/	Jun 97
Constitutionalist Movement of Iran	http://www.irancmi.org/radio/	Jul 97
Farnsworth Chronicles	http://www.songs.com/philo/	Jun 97
Frente Zapatista de Liberacion Naciónal	http://spin.com.mx./~floresu/FZLN/	Jun 97
Icom IC-PCR1000	http://www.icomamerica.com/featured/	Oct 97
Internet Relay Chat: mIRC	http://www.mirc.co.uk/	Aug 97
Japan Radio Company	http://www.jrc.co.jp/index-e.html	Jun 97
MRTA Solidarity Page	http://burn.ucsd.edu/~ats/mrta.htm	Jun 97
Over-the-horizon radar	http://www1.etl.noaa.gov/othr/	Oct 97
Republic of Texas	http://www.republic-of-texas.com http://www.republic-of-texas.org/ http://the-republic-of-texas.org/ http://cnn.com/US/9705/03/texas.standoff/	Jul 97
The Committee to Support the Revolution in Peru	http://www.csrp.org/	Jun 97
The Taliban Page	http://frankenstein.worldweb.net/afghan/Taliban/taliban.html	Jun 97
Turn your PC into a radio station	http://www.sausage.com/store/indexST29.htm	Nov 97

Press Services

Albanian Telegraphic Agency	http://www.telpress.it/ata	Jun 97
Antara	http://www.antara.co.id/welcome-eng.html	Jul 97
Prensa Latina	http://www.prensa-latina.org/	Jul 97
Panafrican News Agency	http://www.africanews.org/PANA/	Oct 97

Propagation

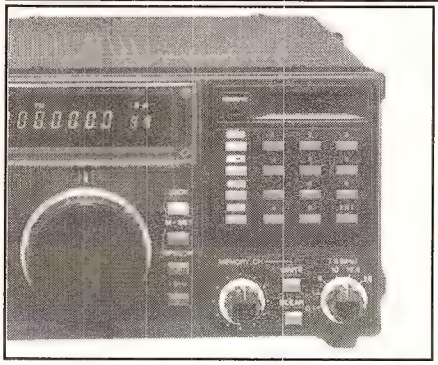
Radio Propagation Sources	http://www.rnw.nl/realradio/propagation.html	Jul 97
Real-time HF propagation conditions	http://www.ionosphere.kel.com.au	Oct 97
STD World Wide Web pages	http://solar.uleth.ca/solar	Nov 97

Scanning

Scanner Recorder software	http://www.davee.com/adar.html	Jun 97

Shortwave Listening

AOR Receiver Control Software	http://www.sapphire.win-uk.net/products.htm	Jun 97
ATFAX software	http://home3.inet.tele.dk/oz1at/.	Nov 97
Australian Radio DX Club	http://www.aaa.com.au/dx/	Aug 97
Clandestine Radio Intel	http://gwis2.circ.gwu.edu/~gringo	Sep 97
Hard Core DX List	http://www.best.com/~rko/hard-core-dx/	Jun 97
HF-FAX page & WXSat FAX software	http://ourworld.compuserve.com/homepages/HFFAX/	Nov 97
Hoopyloop	http://www.nwi.co.uk/spirit	Aug 97
Icom IC-R8500 Receiver Control Software	http://www.execpc.com/~deltacom/	Jun 97
International Meteor Organisation (IMO) Meteor Shower Calendar	http://www.imo.net/calendar/cal97.html http://www.imo.net/calendar/cal98.html	Nov 97
Internet Guide to International Broadcasters	http://swl.sds.se/iguide/	Jun 97
Internet Relay Chat channel #swl information	http://www.trsc.com/irc_faq.html	Aug 97
Irkutsk DX Club	http://www.icc.ru/radio	Jun 97
New Zealand Radio DX League	http://navigator.co.nz/nzrdxl/	Jul 97
Radio Free Internet	http://www.frn.net/rfi	Oct 97
Short Wave Home Page	http://www.conex.com.br/user/kamus/english.html	Oct 97
shortWWWave	http://www.ee.mu.oz.au/staff/pbd/SW/	Jul 97
Southern Cross DX Club	http://tolstoi.saccii.net.au/~stephenn/	Jul 97
Swedish Report Service	http://www-pp.hogia.net/jonny/	Sep 97
SWLTALK	http://itre.ncsu.edu/radio/swltalk.html	Aug 97
Transmitter Documentation Project	http://www.ping.be/tdp/	Sep 97
World on Radio guide	http://www.club.innet.be/~ind1570/worldrad.htm	Sep 97
Worldwide Utility News (WUN) Club	http://www.gem.net/~berri/wun/	Sep 97



All times are expressed in Coordinated Universal Time (UTC or 'z'). Add 10 hours for Eastern Standard Time, 9.5 hours for Central Standard Time, 8 hours for Western Standard Time and 12 hours for New Zealand Standard Time. Readers in areas where Daylight Savings Time is observed should add one further hour.

Summer on shortwave

Whilst international broadcasters, which are predominantly based in the northern hemisphere, are introducing their winter schedules (the W97 period commenced October 26), we folk in the Antipodes seek shelter from the Sun's UV rays, leaving behind the prime DX season of winter. Gone (for the most part) are the Latin Americans and low-frequency Africans that occupy the attentions of many serious DXers, their dulcet tones having melted with the last frost.

Some Pacific area listeners will be all too quick to mothball their receivers until next May, but other, more astute folk, simply broaden their horizons and set their sights on some of the fascinating reception patterns that are unique to our long, hot summer. Here are some of the types of signals that one may expect to encounter:

Early morning

Those Africans on 60 and 90 metres will still be there, but drop out rather quickly after sunrise. Eastern states listeners won't hear much on 60 metres after 2030z, and the cut-off will be correspondingly later for those in the west. During mid-winter, bands such as 49 and 41 metres stay open almost continuously through the day, but for the majority of the time in summer will be quiet a couple of hours after sunrise. On the higher frequencies, expect greater activity and signals from West Africa and the Americas will be in evidence on 16 and 19 metres from first light.

Midday

Except for the high frequencies, expect very little activity through the day for most of the time. But for every rule, there is an exception; just when one estimates that the bands will be completely dead, the occasional day will produce all kinds of freakish propagation and signals from Asia will appear without warning on 25, 31, 41 and even 49 metres. Marker stations include Port Moresby on 9675 kHz, Radio Republik Indonesia Ujung Pandang on 9553 kHz and assorted other Indonesians on 31, 41 and 49 metres.

On especially good days, Singapore will appear on frequencies such as 6000 kHz (Chinese Service) and 6155 kHz (English).

After lunch, Africa too becomes a possibility. Look in particular for the various services from Channel Africa (see the latest schedule elsewhere this month), and Angola on 9720 and 7245 kHz.

Among the treasures logged in past years are Kenya on 6150 kHz, signing on at 0200z and when it was active some years ago, and Mauritius on 9710 kHz. The most exciting aspect of these daytime summer reception modes is that no two days produce exactly the same selection of stations!

Late Afternoon

Things remain fairly quiet on most frequencies up until early evening, although bands such as 31 and 25 metres will be productive with a few Europeans, and a good selection of Middle Eastern broadcasters.

Evening

Twilight brings another interesting reception pattern, which will see European broadcasters fading out much later than would be experienced at other times of the year. Later sunrise at the transmitting end means that some broadcasters from that area will remain audible on 49 and 41 metres until 0930, possibly up to 1030 on 31 or 25 metres. These signals follow the long route across South America, arriving to us from the east. Even on the tropical range, some 0900+ reception has been possible in past years (75 metres harbours the odd BBC frequency, and others).

The tropical bands generally may not be at their best in the warmer months, but the higher frequencies certainly show improvement, particularly during our evening hours. Long-haul routes, such as from Europe, open up and some stations will once again be using 15, 17 or even 21 MHz for Pacific area coverage.

Asians dominate the lower frequencies from just on dark, and it is possible to log many Indonesians and Chinese regional outlets. Thunderstorm activity, an occasional annoyance in winter, will become rife during December and January — constant 'crashes' will result in the abandonment of many listening sessions. The severity will of course vary from region to region.

Short path Europeans and Africans are possible from much earlier on the lower ranges, and in the eastern states will be available on all bands by 1330 or 1400z.

Night

After midnight you can let it all hang out, or so the JJ Cale song preaches. After an evening of festive season revelling, this may well be your inclination but if not, check out 60 and 90 metres — the bands will be full of Indian regional stations. Such frequencies as 4760, 4800, 4820, 4920

Mongolia

The **Voice of Mongolia** now has this schedule for external broadcasts:

Language	Target Area	Time	Frequencies
English	Australia	1200-1230z	12,085 kHz
	South Asia	1500-1530z	9720, 12,085 kHz
	Europe	1930-2000z	9720, 12,085 kHz
Russian	Asia	0830-0900z	12,085 kHz
	Siberia	1300-1330z	12,085 kHz
	Europe	1900-1930z	9720, 12,085 kHz
Chinese	Asia	1000-1030z	12,085, 990 kHz
	Asia	1130-1200z	12,085, 990 kHz
	South Asia	1430-1500z	9720, 12,085 kHz
Japanese	Asia	0900-0930z	12,085 kHz
	Asia	1030-1100z	12,085 kHz
	Asia	1345-1415z	12,085 kHz
Mongolian	Asia	0930-1000z	12,085, 990 kHz
	South Asia	1100-1130z	12,085, 990 kHz

Mailing address: Voice of Mongolia, CPO Box 365, Ulan Baatar 13, Mongolia.

E-mail: *mrtv@magicnet.mn*

This schedule passed on by Richard Buckby.

and 5010 kHz will be productive, and there are also other sub-continental offerings on 4790 kHz (Azad Kashmir Radio) and 4880 kHz (Bangladesh). There are usually a few all-night Indonesians, and the odd East African (Kenya on 4915 kHz is a regular).

Oh, and don't forget that many stations have special programming over Christmas and New Year, including listener phone-ins. Kol Israel, the Vatican and Channel Africa are a few that spring to mind readily.

Who said that summer was boring on the shortwave bands?!

Special RKI program

Bill Matthews, editor of the DX tips segment on **Radio Korea International**'s *Shortwave Feedback*, advises **Adventist World Radio** has been invited to participate in a special one-time relay broadcast to commemorate the 200th edition of the *DX Report* on RKI.

The special broadcast will air on December 21 and the early hours of December 22 during RKI's regular English language broadcasts. This unique opportunity will allow DXers to QSL their reception of AWR as relayed via Radio Korea International's global network.

AWR advises that all correct reception reports will earn a verification card with special endorsement to mark the event. For those pursuing Adventist World Radio QSL stamps for your reception certificates, this will be an opportunity to earn up to three additional sites for your certificate: AWR Kimje, AWR Skelton, and AWR Sackville.

New station from Liberia

Among the more interesting broadcasters emerging on the shortwave bands is Liberia's **Star Radio**. Star Radio is based in Monrovia, Liberia, where it has been transmitting on FM 104 since July 15, 1997. Since September 16, the station has also been broadcasting test transmissions on shortwave with 10kW. During this test period, the hours of transmission are usually 0500-0800z and 1700-2000z, with the station alternating between 3400 and 5880 kHz.

Star Radio aims to provide an independent source of information for Liberians living in the country and in neighbouring regions. It emphasises the search for peace and the promotion of human rights in Liberia. Star Radio is staffed by Liberian journalists, funded by US aid, and is managed by the non-governmental organisation *Fondation Hirondelle* based in Switzerland.

This news from *DX Window*.

Israel

Daniel Rosensweig advises this schedule for **Kol Israel**, for the winter broadcast season:

Hebrew (Reshet Bet domestic service relay). All to North America and Western Europe besides those with bearings:
0400-0655z 9390 kHz
0700-1455z 17,545 kHz
0700-1555z 15,615 kHz
0800-0900z 11,585 kHz (Sat)
0800-0900z 13,755 kHz (Sat)
1000-1200z 11,585 kHz (Sun-Fri)
1000-1200z 13,755 kHz (Sun-Fri)
1000-1200z 17,540 kHz (264°)
1500-1655z 11,590 kHz
1500-2200z 9390 kHz
1600-0655z 7495 kHz
1700-1845z 7395 kHz (296°)
1900-2100z 11,585 kHz
2030-2215z 15,640 kHz (245°)

Reshet Gimel (Israel Radio's music station):
1600-1625z 7465 kHz (70°), 9435 kHz (27°), 11,605 kHz (to NAm/Eur) Sat only

English to North America and Western Europe (besides those with bearings):
0500-0515z 7465, 9435, 17,545 kHz (110 degrees)
1130-1135z 15,640 kHz
1500-1530z 12,080 kHz
1645-1700z 7465, 9435, 11,605 kHz
2000-2025z 7465, 9365, 9435, 15,640 kHz (187°)

Farewell Fredrikstad...

A special, one-off broadcast in English from **Radio Norway International** marked the official closing down of the shortwave transmitter at Fredrikstad on Saturday, October 18. This was the very last opportunity to hear and verify this site. The program contained glimpses from the history of the Fredrikstad transmitter, along with other features concerning the shortwave medium and the hobby of DXing.

Radio Norway International and the facility at Fredrikstad in south-eastern Norway both came to life on January 3, 1948, when a 100 kW transmitter was inaugurated (watch out for RNI's 50th anniversary celebrations early in the new year!).

The current 500 kW Thomson transmitter (which had been radiating 350 kW) was installed in 1976. Phasing out of this unit began on 1 January 1997, following the opening of the new 500 kW facility at Sveio II. Having remained operational since, the Fredrikstad transmitter will now be dismantled.

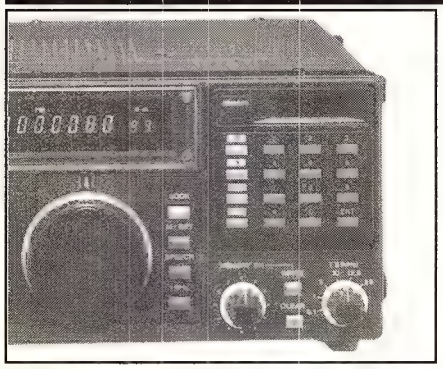
The special broadcast, which beamed to Europe and North America, transmitted to coincide with the Nordic DX-Championships (NorDX '97), was organised by DX-Listeners' Club of

... ☞

South Africa

From Kathy Otto at SENTECH, we have the W97 frequency schedules for **Channel Africa**'s broadcasts to Africa and **Radio Sonder Grense** (domestic service), effective from Sunday, October 26, 1997 to Saturday, March 28, 1998:

English		
0300-0330z	5955 kHz	East & Central Africa
0400-0430z	5955 kHz	Southern Africa
0500-0530z	9675 kHz	West Africa
0600-0630z	11,900 kHz	West Africa
1300-1455z	17,675 kHz	West Africa (Saturdays & Sundays)
1300-1455z	17,870 kHz	East & Central Africa (Saturdays & Sundays)
1300-1455z	9440 kHz	Southern Africa (Saturdays & Sundays)
1500-1530z	9440 kHz	East & Central Africa
1600-1625z	5955 kHz	Southern Africa
1700-1730z	15,240 kHz	West Africa
1800-1830z	15,240 kHz	West Africa
French		
0330-0400z	5955 kHz	Madagascar
0430-0455z	9525 kHz	Central & East Africa
1530-1555z	9440 kHz	Madagascar
1630-1655z	11,900 kHz	Central & East Africa
1830-1855z	15,240 kHz	West Africa
Portuguese		
0430-0455z	3345 kHz	Southern Mozambique
0430-0455z	5955 kHz	Northern Mozambique
0530-0555z	9675 kHz	Angola
0630-0655z	11,900 kHz	Angola & West Africa
1630-1655z	3345 kHz	Southern Mozambique
1630-1655z	9440 kHz	Northern Mozambique
1730-1755z	15,240 kHz	Angola & West Africa
Swahili		
0300-0325z	6000 kHz	East & Central Africa
1500-1525z	11,900 kHz	East & Central Africa
1600-1630z	11,900 kHz	East & Central Africa
Radio Sonder Grense (domestic service)		
0000-0430z	3320 kHz	
0430-0700z	6000 kHz	
0700-1600z	7185 kHz	
1600-2400z	3320 kHz	



Norway. Correct reception reports of this broadcast will be rewarded with a special QSL-card.

Thanks to DSWCI's Finn Krone for this news.

JJY to quit SW

The Japanese Ministry of Posts and Telecommunication on October 18 announced its decision to close down the standard time and frequency station **JJY** (2500, 5000, 8000, 10,000 and 15,000 kHz) and replace it with a longwave station in 1999. There was no mention of the new frequency, output power, or any other details.

Because longwave travels along the ground and does not depend on ionospheric reflection, the broadcaster claims its new time signal will be 10,000 times more accurate than its current shortwave counterpart.

JJY is also often inaudible in western Japan due to severe interference from WWV, WWVH, and other time stations in Russia, South Korea, China, and Taiwan.

Thanks to Sonny Ashimori in Japan for this news.

News in brief

• The Congolese station on 5985 kHz appears to have a new identification announcement, coinciding with the current civil strife. Mahendra Vahgee of Mauritius heard the Brazzaville station identify as **Radio Congolaise de la Liberte** at 1650z, with news in French followed by another identification at 1700 as **Radio Democratic Congolaise**. This station also uses 9610 kHz at various hours of the day and, from time to time, 4765 kHz.

• **Radio For Peace International** in Costa Rica has been heard testing on 6970 kHz (USB) during our early to mid-evening period. Best reception here has been at 1000z, though there is plenty of trouble from nearby RTTY stations.

• The external service from Jakarta, **Voice of Indonesia**, is currently observed on the new frequency of 11,785 kHz commencing at 0800z in English. This appears to be a replacement for 9525 kHz, and is likely also in use at 2000 and 0100z for other English services. Strong signals in eastern Australia from this one.

• According to a report on *World of Radio*, **WRNO** in New Orleans has been once again using 15,420 kHz, albeit irregularly, after many weeks absence. Reception was observed at 2050z, with the station's usual programming in evidence. The station has experienced a number of technical and financial difficulties in recent times, not the least of which was the death this year of its founder, entrepreneur Joseph Costello III.

• Fellow Bathurst district DXer, Phil Ireland, tells me that whilst trying out his brand spanking new Radio Shack DX-394 receiver, he stumbled across **Africa No 1** in Moyabi, Gabon, on its 16 metre band channel of 17,630 kHz. Reception was at 0800z during a program in French, which included a news bulletin and some typical West African music.

• Former UNITA station, **VORGAN** (Angola) has been heard on its evening frequency of 5985 kHz by Bob Hill of Massachusetts. Reporting to NASWA's *Listeners' Notebook*, Hill reports reception at 2100z when an identification announcement and time check were heard, prior to sign off with a national anthem. Programming is in Portuguese.

• The clandestine **Voice of Free Nigeria** has announced a new frequency of 11,715 kHz for its weekly program at 1900z (Saturdays). This replaces 11,680 kHz. This news via *Media Network*.

• Mark Veldhuis of the Netherlands reports hearing **Yaounde**, Cameroon on 4850 kHz from 2212-2225z. This one has been as rare as hen's teeth in these parts, mostly due to a long period of inactivity, though once was a regular on this channel and 9745 kHz. Programming is in French.

Media Network — changes in the wind

The following press release received from Jonathan Marks of Radio Nederland:

"Each Thursday, **Radio Nederland**'s award-winning communications program hits the airwaves, via shortwave, medium wave, satellite and the Internet.

"The program has evolved in the course of more than 800 editions. But it would be wrong if the program became just routine and did not evolve further.

"At the moment we're looking into the best balance between the radio show and the on-line presence.

"In the course of December 1997, decisions will be made as to the future course of the program.

"Since the distribution of the program is moving onto other domestic radio networks besides Radio Netherlands' own shortwave transmitters, there have been recent calls from clients and some listeners to broaden the themes in the program.

"This would mean more features about the Internet and TV with correspondingly much less in the way of shortwave-specific items.

"The propagation review, certain station profiles and our in-depth receiver reviews would disappear from the on-air version of the program.

"The current policy is to maintain a balance between digital news and the traditional analogue world of broadcasting in Europe, Asia and Africa. But the growth of the Internet means we now

Russia

Voice of Russia has this schedule for English to Australia until February 28, 1998:

0600-0700z	21,790, 17,570, 15,470, 12,025 kHz
0700-0800z	21,790, 17,860, 17,570, 15,470, 12,025 kHz
0800-0900z	17,860, 12,025, 9875 kHz
0900-1000z	17,860, 9875, 9835, 9825 kHz
1000-1100z	17,860, 9875, 9835, 9825 kHz

And these frequencies are for South & South East Asia...

0600-0700z	17,795, 15,460, 12,055 kHz
0700-0900z	17,860, 17,795, 15,460, 12,055 kHz
0900-1000z	17,860, 17,795 kHz
1000-1100z	17,860, 17,795, 17,755, 15,560, 15,470, 12,025, 11,880, 11,820, 972 kHz
1100-1200z	17,860, 17,795, 17,755, 15,560, 15,470, 15,460, 12,065, 12025, 11,880, 11,820, 9450, 6205, 972 kHz
1200-1300z	17,795, 17,755, 12,065, 11,880, 11,820, 11,695, 9940, 9780, 9725, 7390, 6205, 4730, 972, 720, 630 kHz
1300-1400z	15,460, 11,695, 9450, 4975 kHz

have to examine the best way of dealing with our media coverage. Some listeners now argue that *rec.radio.shortwave* and other newsgroups are a faster and more efficient way of distributing listening tips and most listeners to this kind of material are now on the Internet."

The station is now inviting specific feedback to the program in light of the upcoming content review. Comments should be forwarded to the station direct by e-mail at media@rnw.nl or to Box 222, Hilversum Holland 1200 JG.

Stay cool until next time!

Craig welcomes your input to this column. Write to the above address.

Ecuador

HCJB World Radio advises this schedule for English broadcasts:

Time	Frequency	Output	Beam (degrees°)	Target
0000-0400z	9745 kHz	100 kW	356	North America
0000-0500z	21,455 kHz	1 kW	35/225	Europe / South Pacific
0400-0700z	9745 kHz	100 kW	330	North America
0500-0700z	21,455 kHz	1 kW	35/225	Europe / South Pacific
0700-0900z	5865 kHz	250 kW	38	Europe
0700-0900z	9365 kHz	100 kW	35	Europe
0700-1058z	9645 kHz	100 kW	228	South Pacific
0700-1100z	21,455 kHz	1 kW	35/225	Europe / South Pacific
1100-1600z	12,005 kHz	50 kW	43	The Caribbean
1100-1600z	15,115 kHz	100 kW	160/353	North and South America
1100-1600z	21,455 kHz	1 kW	35/225	Europe / South Pacific
1900-2158z	12,015 kHz	100 kW	42	Europe
1900-2200z	21,455 kHz	1 kW	35/225	Europe / South Pacific

Of special interest is 21,455 kHz, the station's 24-hour low-powered outlet, which may once again be audible in these parts during the warmer months.

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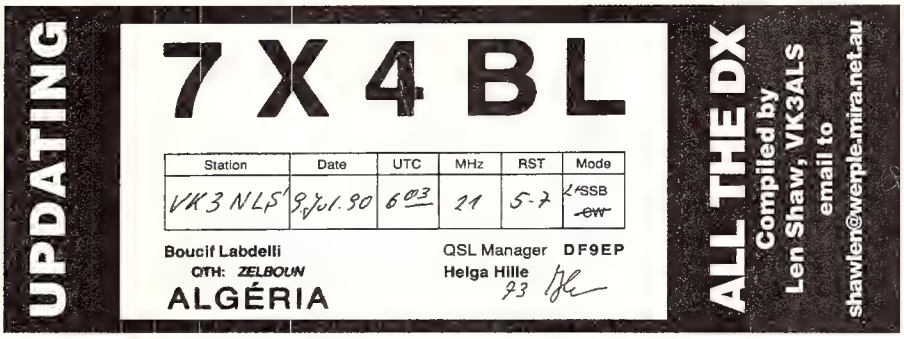

The following information was obtained from a number of sources, including the Shortwave Possums BBS with on-board credit to OPDX/BARF80 (Ohio/Penn DX Bulletin) with thanks to the ARRL, Northern Ohio Amateur Radio Society, Northern Ohio DX Association, Ohio/Penn PacketCluster Network, K4CEF & South-eastern Cluster Group, DJ5JH, DJØWO GØGWA, Z32GX, KN4F, AH6MM, KQ8M, KB8NW, KL7A and WB9OTX. It has been edited to omit specific USA-only interest. R&C wants to supply the best and latest DX information available (as we believe we do, thanks to this column and those by Jim Smith, VK9NS). We welcome regular input from VK and ZL stations, particularly from net controllers on a basis of heard/worked. Please fax Len Shaw, VK3ALS on (03) 9775 2575 (during business hours) to have your info included in this section.

5A, Libya

Felix, DL8OBC, reports that the status of the Rhein Rühr DX Association's upcoming operation from Libya is going to take place as planned, thanks to the support of the Libyan Assaker Club. The team will leave Germany on November 21, and expects to be on the air from Libya a few days later. Their callsign will most probably be **5A7A**, although this has not yet been officially confirmed.

Outside of the CQ World Wide DX Contest, they will use two stations on all HF bands (including WARC and top band) in CW, SSB and RTTY. They will join the contest as an Multi/Single entry to give the 5A and Zone 34 multipliers.

A mailing list has been set up. While they are on the air, you will receive information about their progress and will also be able to send them information and comments.

To subscribe, send a message to 'majordomo@ qth.net' with only the words 'subscribe libya' in the message. Also, there will be an online log search available. Check out their WEB page at: **http://www.afthd.tu-darmstadt. de/5a1a/**

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BZ, China — on EME!

It has been reported that the station **BY1QH** in Beijing has confirmed three two metre QSOs on EME on Saturday, October 18 and Sunday, October 19. The Tsinghua University Amateur Radio Club station ran 200 watts into a four-bay nine-element Yagi antenna.

In the first EME experiment, David, BZ1BM, and Lars, SMØKAK, had hoped to work VE7BQH and W5UN from BY1QH, but failed.

They did, however, work into Europe and made QSOs with three SM stations. David and Lars also heard some DL, 9K and JA amateurs on EME, and are planning their second experiment shortly.

If interested in working China on EME, please send your request via E-mail to David (the student president of BY1QH) at: bzibm@wg.chnmail.com

QSL info and news...

• It is very important to note that **VIØANARE** and **VKØANARE** have two totally separate QSL routes. These two separate operations with similar callsigns were celebrating the 50th anniversary of the ANARE. The VIØ callsign was used from July 1 through October 25. QSLs for VIØANARE go via VK4AAR direct:
A Roocroft,
Post Office,
Dalveen,
QLD 4374

• The VKØ callsign which was used on Macquarie Island was active between October 26-31. QSLs for **VKØANARE** go via VK1AUS (the same for VKØTS):
Simon Trotter,
PO Box 2063,
Kambah Village,
ACT 2902

• Ray, G3NOM /9M2OM, states on November 2 he left Malaysia and returned to the UK. He is expecting another overseas assignment, but until further notice, please forward any mail to: Ray Gerrard, c/o 37 Godward Road, New Mills, High Peak, SK12 2BU, England UK.

TZ, Mali

If you missed Baldur, DJ6SI, as TZ6SI (QRT on October 29), you can still work Larry, TZ6VV, who will be active for about the next couple of weeks (maybe longer) before he goes to the US. Larry has been heard on 21,226 and 21,447 kHz between 1600 and 1830z. Also, check 28,424 kHz around 1515z. QSL via AAØGL.

VK9L, Lord Howe Island

Dan, K8RF, provided the following VK9LX Lord Howe Island DXpedition (November 23 to December 1) update. Everything is reportedly on schedule for Nick, VK2ICV/VK9LX, and Dan, K8RF's, operation slated for the last week of November. They will be operating as a Multi/Single in the CQ WW CW Contest and will run two stations before the contest as much as possible. Their equipment consists of Kenwood TS-930 and TS-850 transceivers, an MLA2500 linear, and laptops. They will make special efforts to be on 160, 80 and 40 metres before the contest. They have a good antenna tuner to help get them on the WARC bands.

Nick pre-shipped all of their antennas to Lord Howe Island. The package includes the 'Battlecreek Special' on loan from W8UVZ and friends, a triband beam (tnx VK4FW), the MLA2500 amp, a 20 metre long vertical, 2-inch masting for the beam, plus coax, antenna tuner, etc.

They have been provided with a laptop computer and software courtesy of Debco Electronics. Dan would also like to thank VE7BS; NM7M and XYL; W2UE/7 and others for their financial contributions. Any help no matter how modest is appreciated. For details, contact Dan at: k8rf@fuse.net.

ZD9, Tristan Da Cunha

Ian, ZD9IL, is active most days. He has been spotted on 12 metres on 24,955 kHz starting around 1345z. He has also been heard on 10 metres this past week on 28,490 kHz around 1445z. He uses a dipole and his QSL Manager is Edwin, ZS5BBO. Edwin hopes that they can find a sponsor for a new beam for Ian. Please be patient for QSL. Edwin gets the paper logs by ship three to four times a year. QSL via ZS5BBO: Edwin Musto, Box 211032, Bluff, 4036, South Africa.

KH2 QSL Bureau information

The KH2 QSL Bureau in Guam is becoming a repository for a very large number of unclaimed QSL cards. A large majority of the cards received here are for 2x1 calls so this document is an attempt to address the correct QSL routes for Guam 2x1 calls only.

The majority of extra class call signs issued for Guam are not issued to amateurs in Guam. They are issued to amateurs who *were* at one time in Guam and no longer are there, amateurs who came to Guam and operated for brief periods, and amateurs who have never been in Guam but obtained Guam callsigns via the vanity call program.

Judging from the cards received at the Guam bureau, a number of amateurs worldwide would like to receive a card from a Guam station, but sending them via the bureau is not, in most cases, the way that obtaining a Guam QSL card can be accomplished. Hopefully this list will assist people in getting the cards from Guam they need.

Guam callsigns

CALL	LEGEND
AH2A	CBA in US
AH2B	CBA in US
AH2C	CBA in US
AH2D	Guam
AH2E	MIA
AH2F	MIA
AH2F	Via N4UK
AH2G	Club - Guam
AH2H	CBA in US
AH2I	MIA
AH2J	MIA
AH2K	MIA
AH2L	MIA
AH2M	Via KP2L
AH2N	CBA in US
AH2O	CBA in US
AH2P	MIA
AH2Q	MIA
AH2R	MIA
AH2S	Guam
AH2T	Guam??
AH2U	MIA
AH2V	CBA in US
AH2W	CBA in US
AH2X	Guam
AH2Y	MIA
AH2Z	CBA in US
KH2A	Guam
KH2B	SK
KH2C	CBA in US
KH2D	Via K8NA
KH2E	MIA
KH2F/?	Via N4UK
KH2G	Guam
KH2H	Via JS6BLS
KH2I	CBA in US
KH2J	Via JARL
KH2K	Via JA1RWU
KH2L	Via WF5T
KH2M	CBA in US
KH2N	CBA in US
KH2O	Via JH1DXU
KH2P	Via JL1BLW
KH2Q	Guam
KH2R	CBA in US
KH2S	Via JH4RHF
KH2T	MIA
KH2U	CBA in US
KH2V	Via JA8RWU
KH2W	Via JH4RHF
KH2X	MIA
KH2Y	Via JA8RUZ
KH2Y/?	Via JA8RUZ
KH2Z	CBA in US
NH2A	Guam
NH2B	Via JA7MVI
NH2C	Via JI3ERV
NH2D	Via JQ3OZY
NH2E	Guam
NH2F	CBA in US
NH2G	Via WF5T
NH2H	Via JA?
NH2I	Guam??
NH2J	Guam??
NH2K	CBA in US
NH2L	Via JA?
NH2M	Via JA?
NH2N	CBA in US
NH2O	Via JA?
NH2P	Via JA?
NH2Q	Via JG3HJG
NH2R	CBA in US
NH2S	CBA in US
NH2T	CBA in US
NH2U	CBA in US
NH2V	Via JA?
NH2W	Guam??
NH2X	Via JR6IQI
NH2Y	CBA in US
NH2Z	CBA in US
VQ9KR	Via N4UK
WH2A	Via JA?
WH2B	MIA
WH2C	Via JA?
WH2D	Via JA?
WH2E	CBA in US
WH2F	Via JI2QUQ
WH2G	MIA
WH2H	Via KP3U
WH2I	Via JH2PDS
WH2J	Via JA3NEP
WH2K	Via JA?
WH2L	Via PA3DZN
WH2M	Via JE7RJZ
WH2N	Via JA?
WH2O	CBA in US
WH2P	Guam??
WH2Q	Via JI1DLZ
WH2R	Via JA?
WH2S	Guam
WH2T	Guam??
WH2U	Guam
WH2V	CBA in US
WH2W	MIA
WH2X	Via JA?
WH2Y	Via JA?
WH2Z	MIA

If you have sent QSL cards to amateurs on the following list via the bureau system, your card is probably sitting there unclaimed. Please QSL again via the route mentioned in the list.

This list was complied on October 1, 1997 and is correct as far as we can see. Please email any corrections, additions, additional information to kh2d@kuentos. guam.net or mail it to the KH2 QSL Bureau at PO Box 445, Agana, Guam 96910.

If you have specific questions about QSL routes for Guam stations not listed here, please email me and I will attempt to provide you with correct information.

A few other notes:

1. The KH2 bureau does NOT handle cards for KHØ. Please don't send KHØ cards to this bureau.

2. Most active KG6 calls are *not* Guam stations. If you work a KG6 station, they are probably in California. KG6ASO is the only known KG6 station active from Guam at this time.

3. KP2 is *not* the same country on the DXCC list as KH2.

4. A callbook address in Guam is *not* an indication that the station is currently in Guam. Some known amateurs have been gone from Guam for years but still have Guam addresses in the US callbook.

See the table below for definitions of the LEGEND column.

Guam: OK to QSL via bureau system.

Guam??: Listed as being in Guam but unknown to Guam Club or Bureau. May or may not actually be in Guam.

MIA: Missing in Action. Don't know who or where they are.

CBA in US: Not in Guam. QSL to US Callbook address.

Via (callsign): QSL direct to callsign. Do not QSL via bureau.

Via JA?: Japanese amateur with Guam callsign. JA callsign unknown. Do not QSL via bureau.

More next month!

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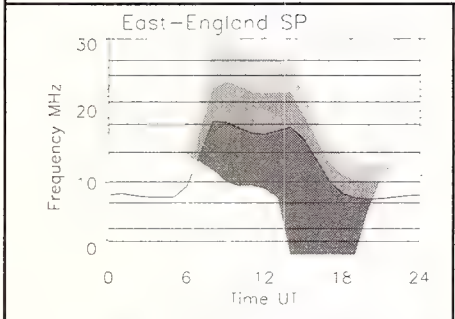
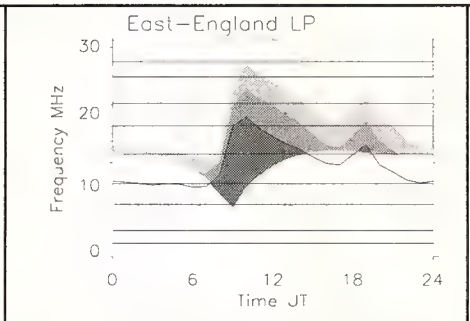
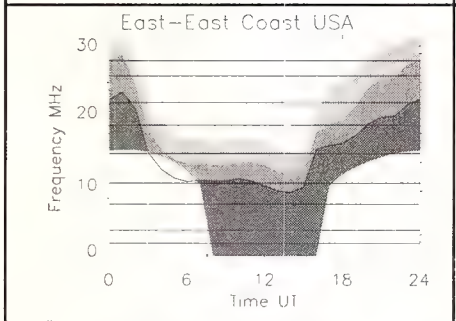
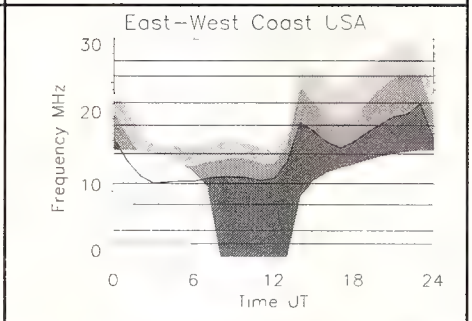








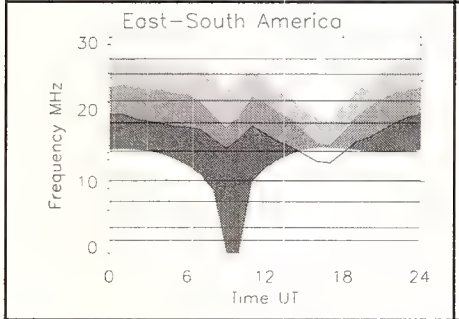
ABOUT THESE CHARTS

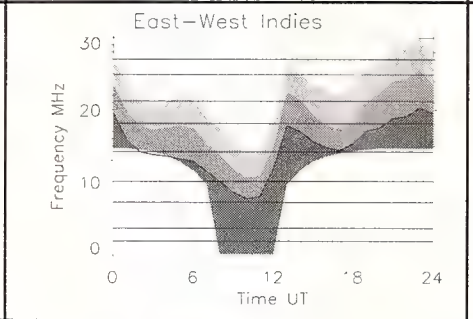
The data on these pages are graphs showing forecasts for expected HF operating conditions between Australia and a number of important DX destinations. The information they contain is prepared by **IPS Radio and Space Services**, a division of the federal Department of Administration Services. IPS monitors changing radio conditions — which are affected most greatly by fairly predictable changes in solar activity — and issues reports and warnings based on that data.

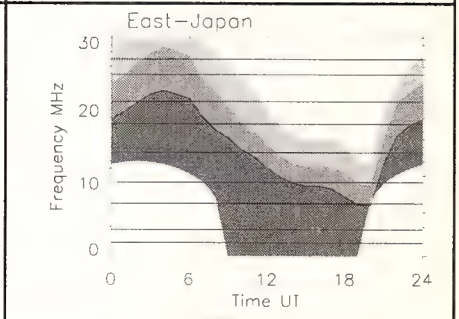
Stations in the eastern half of Australia should refer to graphs on the left hand page. The data on the right hand page is calculated for stations in the western half of the continent. Of course, if your location is in the middle of the continent try reading them *both*... then make an educated guess.

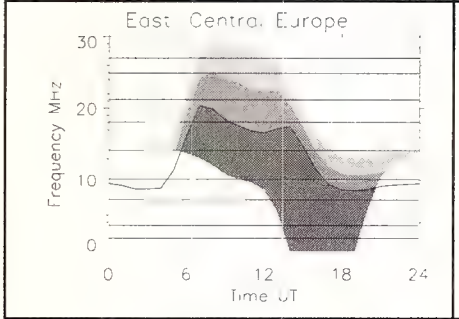
The horizontal axis of each graph represents the hour of the day expressed in Universal Co-ordinated Time or UTC ('z'). The vertical axis shows the entire HF spectrum with a horizontal line representing each HF amateur band.

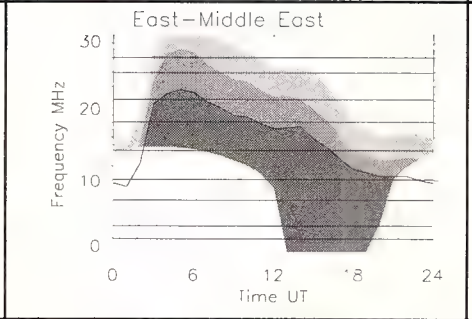
The maps are easy to read. First go to the map which looks closest to the area in which you are interested. Look *up* from the time and *across* from the frequency to the point at which the two variables merge. Note which grey scale — if any — appears at the intersection of the particular time and frequency combination for that area and refer to the legend (right) to find the sort of propagation most likely to apply. If the space is blank the forecast is not good — your time and frequency combination is unlikely to allow communication to the destination station.

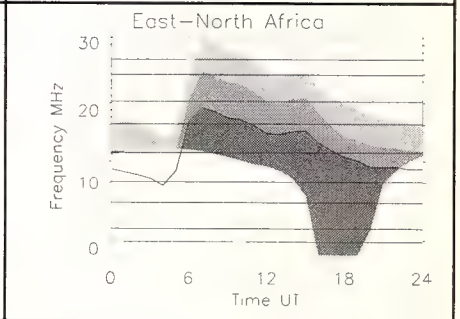


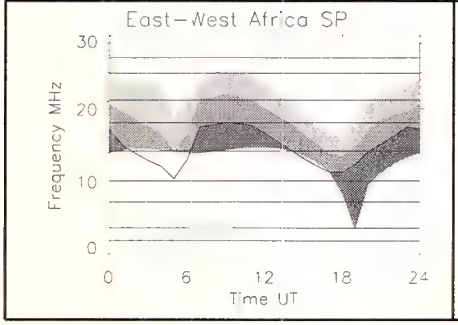


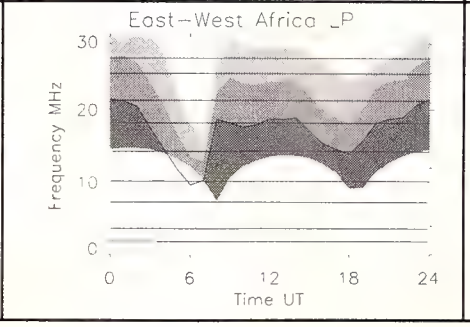


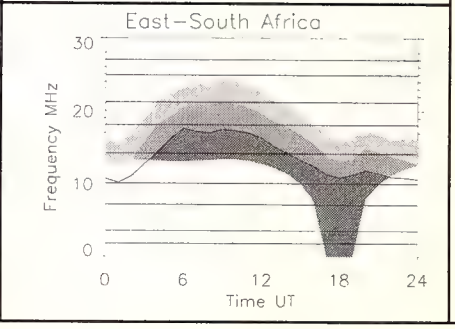












ter Dec 1997

LEGEND

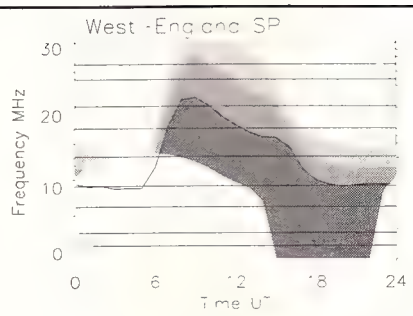
UD Upper Decile — You have a 10% chance of getting through.

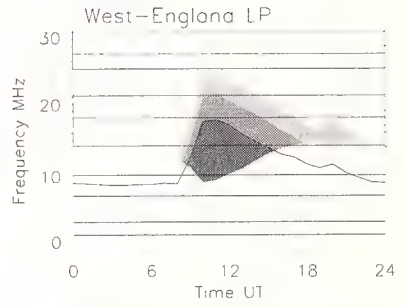
MUF Maximum Usable Frequency. 50% chance to get through.

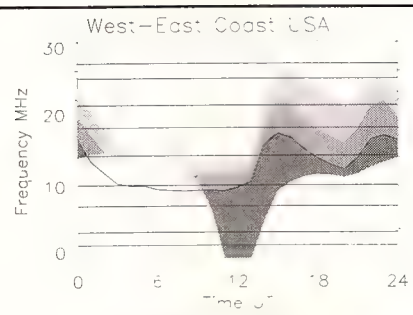
OWF Optimum Working Frequency. 90% chance of a contact.

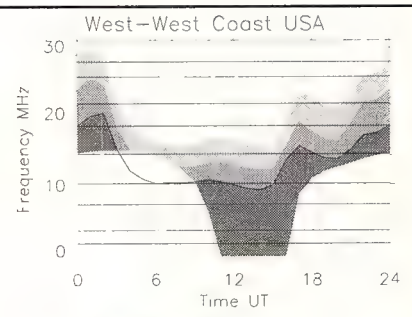
EMU E-layer Maximum Working Frequency.

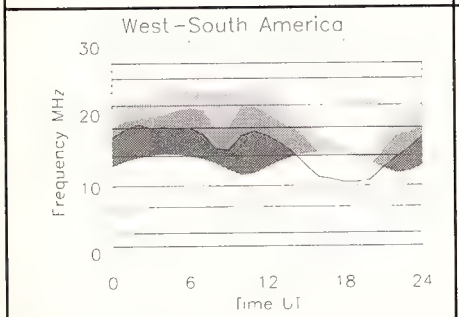
ALF Absorption Limiting Frequency. Lower limit of the usable band.

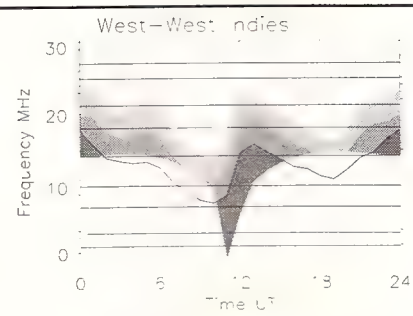


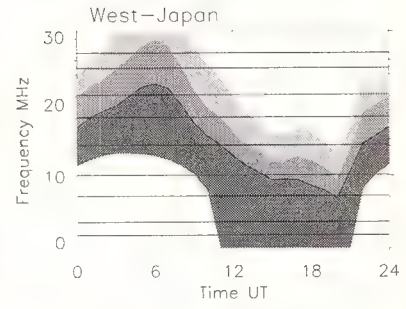


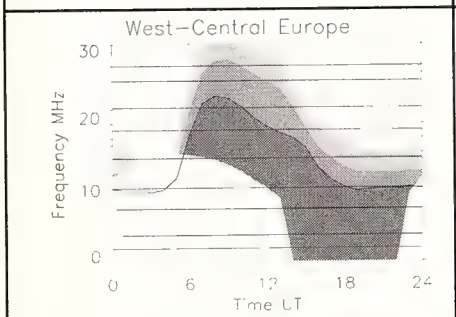


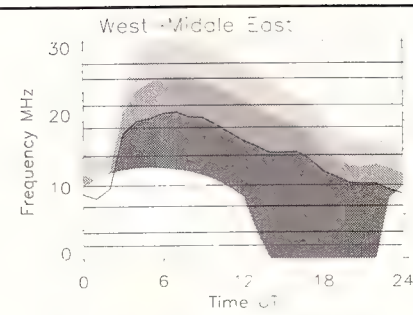


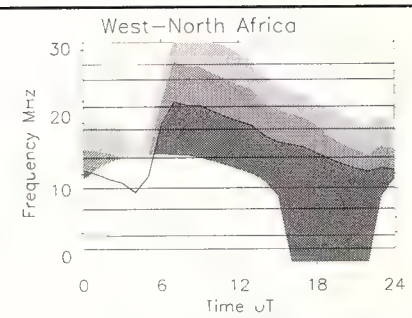


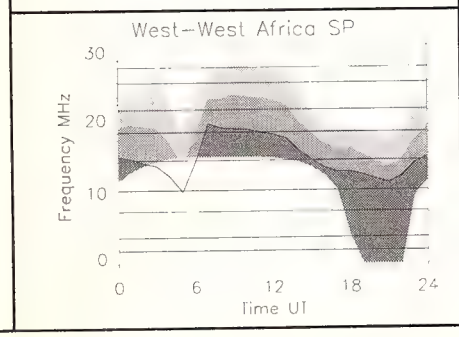


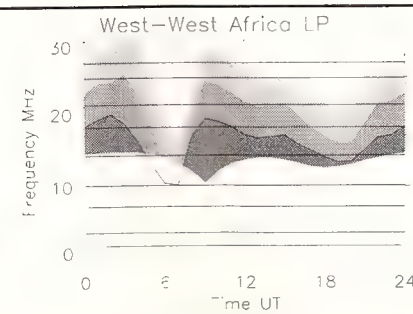


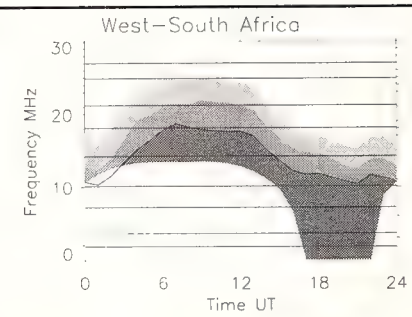












CW — is it the key to ham radio's problem?

By Chris Davis, VK1DO

Are you fed up with hearing the eternal CW debate? Each proponent has a view, which they are adamant ought to be shared by everyone else. Many amateurs are just beyond caring and are thus quite indifferent. What astonishes me, with so much diversity of activity available in amateur radio, is that so many folk choose to focus on debating such a prosaic aspect of our hobby.

You might have ceased to follow the question with interest, however, a quick glance at magazines over the last 10 or so years reveals a disturbing pre-occupation among us hobbyists that rivals the significance and impact that the ordination of women in the Anglican church involves. The contrast between the two is that most people can identify with the church's issue, but would be vexed and perplexed by the perennial obsession amateur radio types have with Morse.

I don't wish to give an opinion on whether it should be retained as a license requirement or not. Such a view is likely to be clouded by personal experience, suffer from anecdotal evidence, rely upon analogies that don't click with everyone still miss grappling with a bigger picture. This issue, to which there is no right or wrong answer, has the potential to ruin us all. Please bear with me.

People say that the worst sort of vehement anti-smoker is a reformed smoker, taking on the crusade with a strength and vigour that often exceeds social sensitivity.

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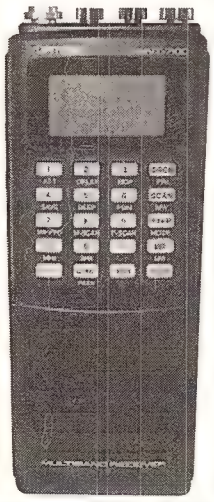

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Tuning Steps:

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SSB: 0.05/0.1/1/5/6.25/9/10/12.5/20/25/50/100kHz

FM-W: 50/100kHz

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At times, successful recipients of Morse qualifications are somewhat like the reformed smoker, taking on a somewhat supercilious perspective in favour of making everyone else subject to the same challenge. Perhaps this is just a foible of human nature. This sort of practice is responsible for the retention of black-balling and other bastardisation techniques in so called initiation rites. Valueless, demeaning and barbaric maybe, but executed by those upon whom it was executed. No other logical reason.

Almost all of us have been involved in an organisation, whether your employment, your hobby, your church or your children's school, where you will have experienced the inevitable propensity of most folk to inevitably lose sight of the bigger picture. Examine any church that has had a massive rift within its congregation and you would assume that something or someone's actions have been momentous to create such a disaster. The result simply defies explanation, when the minor causes are known.

Ironically, the cause of such a massive breakdown in the smooth running of a church, for example, might be that a particular style of music was preferred by some, or some similarly facile aspect of day-to-day running has brought calamity to the group. The grief and consequence of the politics bears little resemblance to the original problem. Like the Campbells and the McDonalds, having been at war against each other for so long, they have forgotten the reason why they ever began their fight.

Anyone contemplating becoming involved in such a group, having little knowledge of the personalities involved, would be forgiven for being somewhat perplexed at the gravity attached to these seemingly minor machinations. Reasonably balanced people would not feel compelled to satisfy their natural curiosity and would, more than likely, forego the opportunity to join the group.

Having spent most of my working life in service-related industries and at the same time selling positions, whether selling service, products or even concepts, I have learnt to place enormous onus on the old adage of when people buy from you, they don' t buy the product or the service, they are motivated by their attraction to you and the image you portray. People buy the 'sizzle', not the 'sausage'. While a person might be a newcomer to a particular product or service and might thus lack objectivity, they are nevertheless experienced in judging people and your personal demeanour and that of your organisation or firm, is what is under scrutiny.

Equally, nothing gives a client more cause for concern than arriving at a shop or a counter where staff are arguing with one another, arguing with a client on the phone or at the counter, or generally creating a potentially acrimonious atmosphere. Frankly, no sensible client wishes to intrude on such an environment and indeed, given a choice, will always favour the firm that markets its wares and services in a manner that interests and enchants the customer and avoids making a client feel like they have walked in on an embarrassing domestic dispute in which the dirty linen is being aired.

If you did intrude upon a sales environment where a particular product, service or procedure was being debated vigorously and even somewhat viciously, I doubt that you would form a very positive impression of that product regardless of its most incredible redeeming features, most of which you would fail to appreciate having been poisoned in your perspective by the careless, front-line ambassadors upon whom your first — and regrettably, *last* — impression was formed.

What has this veritable sales manual got to do with the dreaded coarse mode? I mean Morse Code...

Well, like it or not, whether we keep the code or not is really a very insignificant decision compared with the absolutely pathetic image that our hobby obtains as a result of the constant bickering, self-opinionated utterings and attempts by various aficionados of both causes to take the moral high ground with a mortgage on the truth.

Incidentally, I am well aware of the various countries who have voted in favour of retaining the code. Firstly, that is a separate issue and secondly, I am always a bit cynical of so-called surveys and apparent democracy. If a vote were taken, in Australia, asking whether we ought to pay less tax, I could confidently predict an outcome in the affirmative. If you choose the right group to sample, phrase the question appropriately, there is no limit to the misleading result that can be obtained.

I, for example, enjoy Morse Code, use it proficiently and comfortably at twice the examination speed but see no relevance in making people learn it. As such, any survey doesn't tend to get my input nor the input of numerous other potentially indifferent full-calls. Surveys which cannot possibly take into consideration an adequate cross-section of the population, must be viewed with appropriate qualification. A survey of limited calls would most probably favour dropping Morse, however, that would be considered suspect. I would contend, equally strongly, that surveys that consist of unweighted results and therefore capricious conclusions, ought to be ignored.

Some of the aficionados of Morse learnt the code as part of their military service and attach a pride and significance to the skill which goes beyond hobby attraction. Their tuition and attainment of Morse proficiency wasn't a matter in which they had any choice. Their attainment of the skill and the development and implementation of it is something for which I have the utmost admiration. Many of these ex-signals service personnel brought their skill and their shared interest in matters radio, to our hobby and were thus able to maintain their interests and contact with their colleagues. Their view is thus a very unique one and inevitably includes the merging of nostalgic factors, tradition, history and so forth. Such stoic attachment to a mode and the defence of its retention is understandable but let's not be blinded by the light, such that we go down with the sinking ship.

Today, amateur radio is essentially a leisure/pleasure pastime. As such, it is competing with numerous other pretty impressive and action-packed pursuits, many of which are capable of being criticised as being oriented toward the 'instant gratification' category. There is no doubt that people are guilty of being involved in a multiplicity of activities, with very little depth or thoroughness within each. That is endemic of the age in which we live. You can be repulsed by such dabbling or become adept at cleverly displaying the interesting aspects of our hobby. There are countless strong points which would appeal to a young person or a rank newcomer.

We all come to the hobby with different likes, dislikes, prejudices and beliefs. Surely, if there is one important aim and purpose in our hobby's *raison d'etre*, it must be our individuality. To put it another way, few of us are exactly what we would call conformists, yet many of our ilk seem preoccupied with a slightly neurotic obsession of making us all the same.

I remember welcoming a father and his son to an ACT Wireless Institute divisional meeting. The brief discussion, during introductions, revealed that the young man was quite knowledgeable about matters radio and had come along to a meeting to see what radio things were on offer and I presume, to make an assessment of whether we amateurs, as a crowd of boffins, were attractive. Although our technical topic for that evening, probably had as much potential as any to culture a young person's curiosity, the usual drivel in our general meeting that followed, with the perennial topic of the dreaded Morse, reared its ugly head.

Despite my best attempts to keep the discussion orderly, civil and varied, just like trying to stop the tide coming in, the usual war-horses were wheeled out. If you only saw the deflating effect this irrelevant topic, with the accompanying peculiar fervour that abounded, had on our visiting potential amateur, you would feel sick. I did. It was reminiscent of attending a church, the customs and protocol of which you were unfamiliar, and discovering, to your horror, that you were drinking the baptismal water deluded that you were adhering to your concept of communion.

Don't let's get bogged down, within this crazy Morse debate, with talk of sacrifice, too much instant gratification and all that right wing fuddy duddy stuff. It's not a matter of whether we keep the code or not, it is first and foremost the most significantly detrimental factor in the recruitment of newcomers to our hobby. And if you don't think we need to recruit, read Peter VK1PK's very cogent and disturbing insight (*Amateur Radio*, May 97) into the age make-up of our numbers in Australia and, as he put it, the potentially moribund state of our ilk.

Naturally, the cynical will interpret all my emphasis on the deleterious affect that our squabbling has on potential members and recruits as a veiled disguise for my hatred of the code. Well I will come clean. I come from a family of four radio amateurs, all of whom did their full call tickets prior to the arrival of novice tickets, also prior to the 10 words option. I *do* use Morse, competently and regularly, and simply couldn't give a stuff whether the next man uses it, likes it or gives a moment's thought to the issue. I have spent my time as a high school student, serving on the slow Morse broadcasts, as did three of our family, coached numerous candidates from scratch, sympathised with those who found it difficult and so forth. My brother Roger even pioneered some tuition tapes and so forth.

None of this experience inclines me to feel the slightest bit in favour of the retention of the requirement for code, although I hope there will remain CW allocations and gentleman's agreements to retain the viability of CW and continued interest in the formidable skill of the mode. Of vastly greater immediate importance and the question I would ask of those who love the debate, have you lost sight of what is important to the hobby; namely its perpetuation?

Among the contributors to the debate, particularly of late, are some very eloquent writers who have a firm grasp of hyperbole, however, I would dearly love to see their efforts directed toward something productive, something likely to provide some contribution toward the future, if there is any prospect of one for the hobby.

It astonished me, some years back, when licence fees were mooted to be increased, that we didn't attempt to negotiate. Why not permit an increase, with some assurances set in legislative concrete, securing some allocations and some sensible concessions like removing the requirement for Morse proficiency? Do you realise, even if you haven't passed an exam on Morse, you can still use the code on VHF? (But a Novice, who has passed the test, cannot?!!) With this remarkable anomaly in place I am unaware of anyone running amok on CW on the higher bands. Can we all step back from this ludicrous bickering, which would be amusing at times if it weren't serious, take a deep breath of objective introspection and ask ourselves quite ruthlessly, does it really matter? Does anyone really care, with magnanimous purpose?

In December 1972, when the then leader of the Liberal party, our erstwhile Prime Minister Billy McMahon (later Sir William) was asked what he believed to be the reason for losing the election to the Labor party, led by Gough Whitlam, he made a reply which will stay in my mind forever: Succinctly, he replied "We lost the election the moment we started publicly squabbling and wrangling amongst ourselves.".

The Morse topic, tired and relentless, seems to consist of hobbyists who have lost interest in the experimental side of the game and prefer to vigorously ride their hobby horse. Regrettably, these hobby horses and perhaps their jockeys, according to the casual observer among the larger community, come across as being pretty much off their rockers. You try explaining, to an initially interested person who asks about amateur radio in the context of a social gathering, that while something as exciting, for example, as the Phase 3D satellite, is short of funds for its launch, that the single most pressing topic among amateur radio operators is the retention or divestment of Morse. I bet your listener will rapidly leave your side in an effort to find an accountant or parking inspector to converse with on the other side of the room!

Morse Code is undoubtedly synonymous with the earliest beginnings of amateur radio. With the continued debate, snide and unproductive except to vent the spleens of various people, the unattractive image that the debate creates ought to be quite capable of giving Morse Code the inglorious attribute of essentially being the end of amateur radio.

Here we go again with some competition results, and with your chance to win yet another great prize, this time courtesy of the very nice people at **Uniden Australia** in Sydney.

But before telling you how to collar a great Uniden **UBC760XLT scanner** (which we've been talking about on Page 63 of this issue), perhaps we should discuss our previous competition, in which you were given the chance to win a teriffic little Yaesu FT-50R dual-band hand-held transceiver.

We asked you to tell us its frequency coverage and why the photograph looked ... well, different. It was a different model, and the coverage was specified in the story. The decider was the 25 words we asked you to write to explain why you wanted to win. And the person whose entry appealed the most has indeed won the radio. So well done, **Rick Koonce**, **VK2FLA**, of Berry, NSW.

Rick thought we were kidding when we rang to tell him of his win. Just goes to show — you'll never have a chance of winning if you don't enter! Have a go at this one...

competition time

Okay, now it's time to see if you can win the cute little jigger at the left. It's a **Uniden UBC760XLT** desktop or mobile scanner. On a piece of paper write down, in 25 words or less, why you'd like to win this radio. Then take another look at the FT-50 photograph above. Something's *wrong* with it. You don't have to be a technician to work it out, either! We edited the photograph on the computer screen...

Post your entry to
Uniden Competition,
Radio and Communications,
PO Box 119,
Oakleigh, 3166

Now, here's the fine print: *Entry creates no legal relationship between the entrant and ACP Action or its advertisers. The judges' decision is final and no correspondence will be entered into. Entries must be posted only; no other form of delivery will be accepted. To be valid, entries must be received on or before the last mail on Wednesday, January 28, 1998. The only acceptable postal address for entries is shown in the black box at left. The prize will be dispatched by post or courier at the promoters' expense to a nominated Australian address.*

Online 1997

Michael Evans looks at what communications-type software is available on the Bulletin Boards...

Well that's the year just about gone... and what a year it has been in the computer field! We have seen major advances in the speed department for motherboards, prices on hard drives have plummeted, memory has actually become affordable, a lot of BBSs have collapsed in favour of the internet, and the demise of many of the smaller Internet Service Providers (ISPs) has seen them dropping out of sight like the prices of computer hardware...

Speaking of the Internet, there are a number of larger BBSs that are now also providing gateways into the Internet via the BBS, and some are even doing it back the other way. This is providing a cost-effective way for people to explore certain aspects of the net without having to necessarily pay the costs involved.

There are BBSs popping up that can offer the luxuries of Email, Telnet, FTP and some Web browsing, so keep a look out for those in your travels as they could be worth a look if you only want basic access into the Net without all of the frills of a GUI interface, and at a price that may be substantially cheaper than going direct to an ISP anyway.

PD software registration

There has been some confusion as to how to register the software PD — *Pocsag Decoder* — here in Australia. You can register the software for A$55 with Talkback Systems Australia, PO Box 8054, Northland Centre, Victoria 3072. For more details you can look at the web page **http://www.tbsa.com.au/pd.html** or email pdrego@tbsa.com.au

On the subject of PD, the author Peter Baston is still working on the Windows-compatible version which will hopefully be available very soon. As soon as it is released, I shall let you all know about this useful release of an extremely popular program.

While speaking of new releases, Peter's latest offering is **PD-204.zip** which you should find on your favourite radio BBS, or you can ftp it direct from the author's host site **ftp.demon.co.uk/pub/ham/scanners/pd-204.zip**

In Australia take a look for the file on these radio orientated BBSs:

Short Wave Possums BBS	02 9651 3055
Satcom Australia BBS	02 9905 0849
Radio Shack	03 9532 5737

The new version has had the Shareware timeout increased to 15 minutes before it shuts down, which makes it easier to evaluate for your needs, and there is now a configurable setting that allows you to use a Hamcomm decoder or the new OptoElectronics Optolinx interface with the software. Take a look.

More on Trunker

Since I did the review on the *TRUNKER.EXE* software (which was the one that allowed you to decode the data channels of a Motorola SmartNet Trunking System) several months ago, I have received megabytes of email from people about the product.

Well, I am pleased to say that release 3.42 is now available and it has had some major reworking of the code and works much better. Interestingly enough, the documentation files for the new version say that you need to provide a baseband audio or discriminator output if you like into the Hamcomm interface or an Optoelectronics Optolinx to get the software to work.

Well, I modded up one of my older Realistic scanners (a PRO-2022), and plugged it all in, and... *nothing*!

After much swearing and cursing, I plugged the Hamcomm interface directly into the headphone output and away it went!

Obviously the filtering on the audio stage of the PRO-2022 is little enough to still allow it to work okay. So if you want to take a look at the data streams coming from a Motorola SmartNet trunking sys- ....☞

Internet sites of interest...

One of the most common questions I received from newbies to the internet is 'what can I look at? With that in mind, keep this list of World Wide Web sites handy next time you get a chance to 'surf the net'.

http://cutter.sincom.com/~scanware/index.html	ScanWare FCC Database (OEM)
http://itre.ncsu.edu/radio/faqs/clubs.faq.html	Scanner Clubs
http://itre.ncsu.edu/radio/faqs/parnass.faq.html	General Scanning FAQ
http://ourworld.compuserve.com/homepages/bcheek/	COMMtronics Engineering
http://www.access.digex.net/~eeb/eeb.html	EEB Electronics (Dealer)
http://www.accessone.com/~vbook/hronline.htm	Ham Radio Online
http://www.alinco.com/	Alinco (OEM)
http://www.aorja.com/index.html	AOR Japan (OEM)
http://www.cc.gatech.edu/db1/fly/airport-info.html	Aviation Freqs
http://www.cpl.uiuc.edu/~tpeckish/appendix.html	AR8000 Receiver Info
http://www.demon.co.uk/javiation	Javiation (Dealer) UK
http://www.demon.co.uk/lowe/index.html	Lowe Electronics (OEM & dealer) UK
http://www.execpc.com/~aesham/	Amateur Electronic Supply (Dealer)
http://www.grove.net	Grove Enterprises (Dealer)
http://www.hamradio.com/	Ham Radio Outlet (Dealer)
http://www.iglou.com/copper/	Copper Electronics (Dealer)
http://www.kenwood.net/	Kenwood (OEM)
http://www.mcc.ac.uk/OtherPages/AmateurRadio.html	Amaetur Radio
http://www.mot.com/	Motorola (OEM)
http://www.pacifier.com/~ussn/	US Scanner News (Magazine)
http://www.panix.com/clay/scanning/	N2VKG Scanning Reference
http://www.perconcorp.com	PERCON FCC Databases (OEM)
http://www.pics.com/gilfer/	Gilfer Shortwave (Dealer)
http://www.radioinc.com/	Radio City (Dealer)
http://www.ro.com/customers/hobbystop/bearclub.html	Bearcat Club
http://www.scannerworld.com/	Scanner World (Dealer)
http://www.sound.net/~ne/	National Electronics (Dealer)
http://www.tucker.com/	Tucker Electronics (Dealer)
http://www.u-net.com/~morfis/acarstec.htm	ACARS Information
http://www.uark.edu/~plaws/scan/	Peter Laws Scanning page
http://www.uniden.com/	Uniden (OEM)
http://www.yaesu.com/	Yaesu (OEM)
http://www.zianet.com/kc5kto/scanner.html	Mods, Computer control & more
http://www2.kiss.com.au/winradio/	WiNRADiO home page (OEM)

If you have previously visited some of these sites, check them again carefully; the internet is a constantly changing entity with people moving around their web addresses as often as they change their socks so to speak.

You will find many of these sites have a lot of other useful links to other sites again, and a few have links to FTP sites so you can download the latest and greatest in radio software. Drop by when you get a chance.

Online 1997

continued...

tem, get a copy of **TRNK342.ZIP** from my ftp archive and you can spend more hours in front of the PC.

The ftp address is **ftp://ftp.tbsa.com.au/pub/review**

Motorola SmartNet is a proprietary trunking system to Motorola Communications and it does carry telephone traffic. It is illegal in Australia to monitor any traffic carrying telephone conversations.

FidoNet Mail versus Email

Many people have become confused recently between FidoNet Mail and the more generic term Email. They are two completely different things, however some gateways do exist for the two to be able to communicate.

FidoNet Mail is the standard used by the FidoNet BBS community, and relies on messages being carried from one host machine to its final destination via numerous other machines. The BBS with the originating message dials into its mail host usually once per day, sometimes more. Others call only every couple of days, but whichever the case, when it connects, it offloads its messages for the day.

That machine in turn then dials into another and so on until the message is passed through to the desired destination. This style of mail transfer can be very slow, especially if the message is going to another part of the world. When I was running a FidoNet BBS myself, my mailing address was Michael Evans 3:632/393 with the address broken up into 3: being the Zone (Australia) the 632 referring to the Network and 393 being my BBS's host assignment.

Internet Email works on a slightly different curve in that most internet machines are live to the net at all times, hence mail can travel huge distances in a very short time, but the addressing is handled in a different manner. My Internet email address is **michael@ tbsa.com.au**. This is broken up into, firstly, the person you wish to send the mail to, in this case 'michael' then comes the Internet machine to send it to. The domain name tbsa.com.au is a fully-registered domain name with AUNIC, the people who look after the domain delegation in Australia, and this name corresponds with an IP address.

When a call is made to tbsa.com.au the name server does a lookup of that domain name to locate the corresponding IP address, and from there

ftp — *is it worth the bother?*

Okay, let's now take a look at some good Internet ftp sites that are available across the globe.

ftp, or **File Transfer Protocol** allows you, the user, to download files from the remote host machine onto your service provider's machine for you to later download on to your machine. Many internet hosts allow what is called 'Anonymous FTP', which means you don't need to have an account on the remote hosts machine to be able to access their file database.

Some huge archives worth visiting for radio files are:

archive.afit.af.mil/pub/space/
bubba.business.uwo.ca/mods
ftp.cdrom.com/pub/hamradio/
ftp.crl.com/users/ro/vhealey/www
ftp.cs.buffalo.edu/pub/ham-radio
ftp.demon.co.uk/pub/ham
ftp.iea.com/pub/borg/hdn
ftp.qrz.com/qrz
ftp.sunet.se/pub/radio
garfield.catt.ncsu.edu/pub/hamradio
grivel.une.edu.au/ham-radio
ham.eetech.mcgill.ca/pub/ham-radio
mgate.arrl.org
nic.funet.fi/pub/ham
oak.oakland.edu/pub/hamradio
rtfm.mit.edu/pub/usenet/news.answers/ham-radio
scitsc.wlv.ac.uk/pub/hamradio
tandem.com/hamradio
ucsd.edu/hamradio
ucsd.edu/mailarchives/info-hams
unbc.edu/ampr
wb3ffv1.sed.csc.com/ham

Here you will find an incredible array of data relating to all aspects of radio communications. If you have not visited an ftp archive before, there are a couple of things to note that are different to accessing a normal bulletin board service (BBS). Firstly, you don't get the pretty graphical bits that come as standard these days on most BBSs. You possibly won't get a listing of all the files together with a description of what is in each file or archive. Keep a look out for a file called **index.html** or a README file in each directory that you look in. If that doesn't have a complete listing of the files in that particular area, it may contain some useful bits of information on obtaining the files.

Another important aspect of using an ftp archive, particularly under a shell or terminal account, is actually *obtaining* the files. The command **get** and the command **mget** are what you need. If you want to obtain a file called *TEST.ZIP* for example, then the command *get TEST.ZIP* will send the file from the remote host to your host computer. If you want to use a wildcard command like *.ZIP or something similar to obtain more than one file at a time, then you would use the command mget *.ZIP and that will send you all of the files that match your *.ZIP selection. Under a Windows-based graphical environment it is much easier with the various FTP managers that are available, simply allowing you to point and click with a mouse.

Most of the archives will contain files that have been simply zipped up using PKZIP or one of the Unix-style derivatives. If you happen to find any of the files that have a TAR or TAR.GZ extension then you may have a problem, as this is a file that has been compressed under a Unix environment... and you will need a Unix environment to uncompress it in, or an unarchiver that allows you to uncompress into a Windows or DOS environment. They are available, but they are a little rare. Again, have a scrounge around on your local BBS in its archiver section for something that may do the trick.

The Internet, being the way that it is and expanding as quickly as it is across the world at the moment, undergoes a lot of changes almost on a daily basis. With that in mind, some of the links, ftp site suggestions that are posted in this column from time to time may not necessarily be around at the time you try to check them. People change service providers, sites expand, machines get added to archives — all of these things and more can mean the difference between getting through to your targeted site and not getting through at all.

Michael Evans looks at what communications-type software is available on the Bulletin Boards...

By Michael Evans, PO Box 8054, Northland Centre 3054
email: michael@tbsa.com.au

Non Austel-approved modems

I have mentioned it before, but as it is just about Christmas time, they seem to come out of the wood work even more. The unwary buyer, or sometimes people with their eyes wide open, go out and purchase a non Austel-approved modem, usually for a hundred or so dollars cheaper than the approved models. They may seem like a bargain at first, but if you consider the substantial fines that can be levied on you if you are caught, the saving soon disappears out the window.

If a modem is non-approved, then that does not necessarily mean that it is even going to work, or worse still it could damage your phones or other devices that may be hung on the line also. Modems have to undergo a rigorous testing procedure before they are approved, and are tested for a lot of different things including their suitability for the Australian telephone network.

Be careful, some people may try and sell you a non-approved modem. The price may look attractive at first but think of the consequences...

the mail is then sent to that destination. For all of this to work properly, a domain name needs to be delegated and the relevant routing paths put into place upstream of the destination machine, but if the machine has been set up correctly all this will happen flawlessly.

So, as you can see, the principle is similar, but the speed is definitely in favour of the Internet as a message can be over the other side of the world within a couple of minutes or less in many cases, while the same thing via a FidoNet BBS could take a week or more.

With that in mind, however, the FidoNet BBS is still a very valuable tool for the individual wishing to communicate with like-minded souls on other BBSs and exchange information.

To the newcomer in the BBS and Internet community, some of the files can be a little confusing. System administrators make constant use of file compression programs to conserve space on their system for a start, but secondly and more importantly they can put a whole heap of files in the one file which makes it easier for the user to download and a lot quicker as well. Now, compression programs have been around for years, and over time they have become extremely efficient in just how much they can compress things. The most common ones these days are PKZIP, ARJ and LHA. Of course, the trick is knowing *which* one(s) have been used in compressing the files you want to look at.

It really is a pretty simple system: files with a ZIP extension have been done using PKZIP, files with an ARJ extension have been done with ARJ and files with an LZH extension have been done with LHA (and, no, that is not a typo!). If you are going to hover around BBSs or spend a lot of time ftping files on the Internet, then you really need all of these as a good starting point. There are a couple of others that are sometimes used also, all of which you can obtain from virtually any BBS in the country, or they will be found on most of the good Shareware CD-ROMs that are available from your local computer store or the bigger department and specialty shops like Harvey Norman, Myers and Grace Brothers.

ARC602.EXE *Version 6.02 ARC files*
ARJ230.EXE *Archiving program create .ARJ files*
ARJ239A.EXE *ARJ archive utility version 2.39a*
ARJ241-P.EXE *ARJ archiver version 2.41p*
LHA213.EXE *latest creates .LZH archived file*
PAK251.EXE *PAK version 2.51 handles *.PAK format*
PKZ204G.EXE *PKZip version 2.04G direct from PKWare BBS*
SDNV100.EXE *SdNV archiving utility handles *.SDN Format*

All of the above are self-extracting archives, which means you simply type the name of the file to execute it, then the file will automatically uncompress itself for you into the directory you have executed the program from. So, based on that, it is a good idea to set up a temporary directory to extract the files into first, and then copy them across into the directory you want to keep them in later.

There was a change made to the compression formats of ZIP files back a few years ago. The current version 2.04G is backward compatible so you can unzip old ZIP archives, but the older versions cannot unzip the files that have been zipped using 2.04g, so if you have an old version of PKZIP/PKUNZIP then now is a good time to upgrade.

All of these programs are, of course, shareware, and need to be registered with their respective authors for continued usage. They are all useful, but you will find that most common archives will be done using PKZIP.

Make sure you read the documentation files that come with each one, as they are all different in their operation. I get heaps of complaints from new users unable to drive the archiver software correctly. *Read the documentation files first!* That is why they are included. They may seem complex at first, but you will soon get the hang of unarchive and re-archiving after a while.

Well that's it for another month, folks, and another year. As the January issue comes out on Christmas Eve, I'll pretend you won't see it until next year and add that 1998 is going to be an interesting one in the PC world as we get the latest offerings from Microsoft and some of the other big players in the software world.

Hopefully the prices of the new Intel MMX technology will drop down a lot more to make them even more affordable to those who want that little bit of extra grunt in their games scenarios. Until next time, and ***Online 1998***, happy computing, gang.

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More on the CTCSS issue

ACBRO's approach to the authorities to have the sub-audible tone system used on some other bands (known as CTCSS) not permitted on the CBRS has suffered many delays as previously reported. Many phone calls between Adelaide and Canberra, but no text on paper.

Finally, the committee was pleased to receive a response to its submission made last year on this subject, but amazed to find that, as pointed out by one of its members, there is yet another un-elected group of people who hold the fate of the CBers destinies in their hands.

As the letter explains, an organisation known as Standards Australia does in fact tell those who would tell us, what we can or cannot do. It was previously thought the Minister of the day, who handles the communications portfolio, was the 'almighty' to whom organisations like ACBRO should approach regarding any change or suggested improvement. It used to be DOC, then DoTC, then SMA and now is ACA (Australian Communications Authority) — and it responded to ACBRO as follows...

Use of CTCSS in the Citizen Band Radio Service

"Thank you for your September 1996 submission, and subsequent correspondence, that argued against the use of CTCSS in the Citizen Band Radio Service (CBRS) in Australia. I understand that you have also discussed this issue with officers of the Australian Communications Authority (ACA). Please accept my apologies for the delay in preparing this response.

"The broad issues raised in your submission have been considered by the ACA.

"Firstly, I must mention that the Citizen Band Radio Stations Class Licence does not permit the operation of CTCSS, and use of such systems constitutes an offence under the provisions of the Radiocommunications Act 1992 (the Act).

"The ACA strives to ensure that operators in the CB bands comply with the class licence. However, our effectiveness is dependent on the CBRS community supporting the ACA by providing it with information that allows the identification of persons committing offences. If you or members of your organisation know the identity of persons using CTCSS on CB bands, I ask that this information be provided to the nearest ACA Area Office for appropriate action.

"Secondly, 27 MHz CB equipment needs to comply with Australian

AUSTRALIAN ASSOCIATION OF CITIZEN and BAND RADIO OPERATORS Inc.

Trevor Colwell reports on the latest from ACBRO

Standard AS/NZS 4355:1995 (or the former Minister Standard MS312), whilst the UHF CB equipment is required to meet Australian Standard AS/NZS 4365:1996 (or the former Ministerial Standard MS250). CTCSS functionality in 27 MHz CB equipment is not permitted by AS/NZS 4355:1995. However, the standard for UHF CB sets, AS/NZS 4365: 1996, is silent on the issue of CTCSS functionality.

"The CB standards adopted by the ACA were prepared by Standards Australia. The ACA has an agreement with Standards Australia for that organisation to prepare and publish radiocommunications standards for adoption by the ACA, where appropriate, as mandatory standards under the Act.

"The technical committee that worked on the CB standards was drawn from relevant sections of industry as well as government and professional associations.

"Before approving a standard, Standards Australia makes draft standards publicly available and seeks community comments. Also, the charter of Standards Australia requires Australian Standards to align, wherever possible, with equivalent international or regional standards.

"While Standards Australia is the body responsible for preparing the CB standards, the ACA is responsible for spectrum management in Australia. The ACA facilitates access to the spectrum by a wide range of users. It also establishes arrangements that are intended to keep interference to individual users to acceptable levels. From a spectrum management policy point of view, it would be desirable to have an arrangement where users could use CTCSS if they wished but in a way that did not reduce the utility of the band for other users.

"Accordingly, the ACA will ask Standards Australia to examine both the 27 MHz CB standard and the UHF CB standard to determine the possibility of including appropriate technical measures that will assist in alleviating the problems outlined in your submission.

"I understand that Standards Australia would welcome submissions on the above matter. I would encourage you or members of your organisation to become involved in the standards-making process. Should you decide to do so, a first point of contact at Standards Australia is the Projects Manager for Committee RC/1. The address for Standards Australia is PO Box 1055, Strathfield, NSW 2135.

"In due course I will advise you of the outcome of deliberations by Standards Australia."

And so ACBRO, not being one to 'snub' advice of this nature, put pen to paper to stake its claim for the benefit of CBers, by approaching those who tell them, and ultimately tell us, about our concerns on the subject of CTCSS on the CBRS. The letter to the Project Manager of the Standards Association from the committee was promptly sent, briefly outlining the case as follows:

"We make this contact with you upon the advice of the Manager of the Australian Communications Authority. We have some time ago lodged with them a submission opposing any consideration to approving the use of the sub-audible tone system known as CTCSS on the Citizens Band Radio Service (CBRS) which they have confirmed is illegal in respect to the class license covering the service.

"The Australian Communications Authority (ACA) have indicated that they will be in touch with you on this matter, presumably to seek standards to enable use of CTCSS in the CBRS. In discussions with them we have been amazed to find that they accept that CTCSS is similar to the 'SelCall' facilities that are permissible on the bands, and hence fail to see the difference which in simple terms is that, a traditional operator cannot communicate with such a user, whose reception is muted out immediately the press to talk switch is released. Thus one is not able to advise the other of any error of his ways, or assist if the call was of an

emergency nature. Many other problems are evident where some users are currently using this facility illegally, and our original approach in making a submission was to have the matter addressed quickly before it became out of hand. We were surprised to learn that your organisation was to some degree, the originators of regulations pertaining to the use of the radio spectrum.

"We are keen to be consulted on any matters to do with the CBRS, particularly where change is envisaged. The ACA suggested that we should become involved in the standard-making process, which prompts this communication with you. And you can be assured that this is our wish for the future, and more particularly, in any consideration to change which approves the use of CTCSS on the CBRS.

"It is important to realise that the CBRS relies on self-regulation. This form of control, despite being difficult, can only exist by the users of the service being able to communicate with each other.

"This facility is totally lost when a user appears who is using the CTCSS facility. No matter what transgression from the 'norm' is carried out by such an operator, he cannot have his errors of the way corrected, as self-regulation requires.

Compromise

"This Association has no objection to the extended sharing of the band allocated to the citizens of Australia through the class license, providing equality is maintained. It is understood that regulations are already in existence to enable land mobile radios to be used on the CBRS providing that the equipment power capability is reduced to that allowed on the CBRS. To add to that regulation indicating that if the unit to be modified for such use is equipped with CTCSS facilities, it should (and must) be disabled, would be a reasonable compromise.

"Our Association is also of the firm belief that use of the CBRS should continue to be limited to voice communications. The exception to this, of course, is that of the approved SelCall which has become acceptable to the users of the band, despite the often-heard abuse of the calling tone. No changes should be made to vary this established tradition whilst the number of channels is limited to that which is current.

"It is hoped that these few notes will be taken into consideration should any change be envisaged. We avail ourselves to provide a copy of the submission made to the ACA should same not have been provided to you. And we would reiterate, that we would welcome being consulted on any anticipated changes to conditions of operation in the CBRS in Australia."

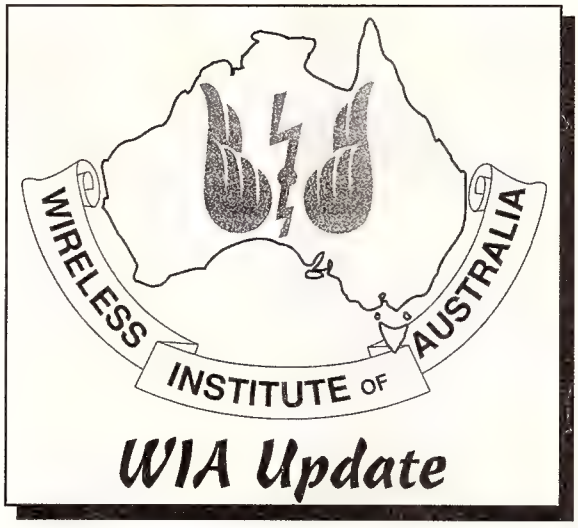
So from all of this we see at ACBRO, the wheel turns very slowly, and time will tell what the outcome may be. If nothing else, it has been confirmed from the ACA that the class license covering the CBRS does not permit the operation of CTCSS and, in fact, *does* constitute an offence under the Act. Stay tuned...

ACBRO ASSOCIATED CLUBS

Below is a list of clubs and organisations affiliated with ACBRO Inc. If you have one of them in your area, please give them your support of membership. Full details can be obtained by contacting the group of your choice from the following list.

For club membership or affiliation inquiries, please contact: **ACBRO Inc**, PO Box 170, Walkerville, South Australia 5081

Aust. National Four Wheel Drive Council	PO Box 79, Canberra, ACT 2601
Aust. National Four Wheel Drive Radio Network	PO Box 67, Elizabeth, SA 5112
BG-3 Filipino Radio Club Inc	PO Box 6390, Parramatta Delivery Centre, NSW 2150
'Blue O' Radio Group	PO Box 1337, Fyshwick, ACT 2609
Barossa & Districts Repeater Assoc, Inc	RMD Truro, SA 5356
Broken Hill UHF Repeater Club Inc	PO Box 1023, Broken Hill, NSW 2880
Bunbury Radio Club	PO Box 31, Bunbury, WA 6231
Burnie Citizens Radio Club	PO Box 655, Burnie, TAS 7320
Canning River Radio Club	53 Parkside Ave, Mt Pleasant, WA 6153
Central Aust Radio Emergency Service (CARES)	PO Box 8901, Alice Springs, NT 0870
Coal Miners Wonthaggi CB Club	PO Box 420, Wonthaggi, VIC 3995
Dusty Radio Group of QLD	169 King Street, Charleville, QLD 4470
East Coast Radio Club	PO Box 412, Bexley, NSW 2207
Echo Romeo CB Association	PO Box 302, Morphett Vale SA 5162
Elizabeth CB Radio Foxhunt Group	C/- 44 Pix Road, Davoran Park, SA 5113
Felix Radio Club	PO Box 78, Goodna, QLD 4300
Friendship Radio Club Inc	PO Box 394, Kallangur, QLD 4503
Geelong Radio CB Club of Australia	25 Beringa Avenue, Grovedale, VIC 3216
Gippsland Repeater Assoc Inc	PO Box 555, Maffra, VIC 3860
Home Brew Makers CB Radio Club	PO Box 224, Gratton, QLD 4343
Inlander CB Radio Club	PO Box 5712, Rockhampton, QLD 4702
International Black Duck DX Group	PO Box 224, Gratton, QLD 4343
Kagrupo Radio Club	PO Box 951, Kings Cross, NSW 2011
KBY 03 Repeater Association	PO Box 57, Port Elliot, SA 5212
Kilo Romeo Circle of Friends	PO Box 16, Cleveland, QLD 4163
LT Club Inc	PO Box 626, Launceston, TAS 7250
MBV 08 Repeater Association	PO Box 44, Charleston, SA 5244
Murray Bridge Agric & Hort Society	PO Box 315, Murray Bridge, SA 5253
Naracoorte UHF Association	PO Box 465, Naracoorte, SA 5271
Newcastle Scanner Shortwave Group (NSW) Inc	PO Box 728, Charlestown, NSW 2290
Oscar Romeo CB Club	PO Box 203, North Geelong, VIC 3215
Omega Radio Club, Inc.	PO Box 320, Malvern, VIC 3144
Overland Radio Club	PO Box 1010, Murray Bridge, SA 5253
Ozzie Rock	PO Box 6046, Woodridge East, QLD 4114
Ozzy Eagle DX Group	PO Box W110, Armidale, NSW 2350
Pioneer Radio Association (SA)	PO Box 1, Para Hills, SA 5096
Pioneer Radio Association Aust	PO Box 1, Para Hills, SA 5096
Port Adelaide Radio Club	PO Box 352, Port Adelaide, SA 5015
Queensland Blue Heeler Soc Radio Club	PO Box 1122, Castle Hill, NSW 2154
Queensland Radio DX International Club	PO Box 586, Warwick, QLD 4370
Radio Hobart CB Club	PO Box 93, Claremont, TAS 7011
Rotten Radio Group International	PO Box 4, Dry Creek, SA 5094
SA Rotten Radio UHF Association	PO Box 4, Dry Creek, SA 5094
Shipwreck Coast DX Int Group	PO Box 1380, Warrnambool, VIC 3280
South-West District CB Radio Club	PO Box 620, Warrnambool, VIC 3280
Sugar Valley Radio Club	PO Box 1070, Edgeworth, NSW 2285
Sun Centre CB Radio Club	PO Box 912, Swan Hill, VIC 3585
Sydney Radio Group	PO Box 185, Gordon, NSW 2072
The Triple "Rs" Group	PO Box 282, Ingle Farm, SA 5098
Transworld CB Radio Club	90 Crozier Avenue, Daw Park, SA 5041
Transworld Sidebanders (The X-Ray Club)	13 First Street, Port Pirie, SA 5540
Tweed Radio DX Group Intnl	PO Box 977, Ipswich, QLD 4305
Ugly CB Club	PO Box 1116, Morwell, VIC 3840
UHF Assoc of WA Inc	PO Box 316, Cloverdale, WA 6105
Ultra-Lite Radio Club Inc	PO Box 3178, Birkdale QLD 4159
White Fox Radio Club	PO Box 288, Salisbury, SA 5108



The WIA's '1998 Call Book' is out. I used inverted commas because a change to the title has been introduced with this year's issue. Now called *The Australian Radiocommunications Reference Guide and Radio Amateurs' Call Book 1998*, the WIA is revitalising the publication in preparation for the introduction of the Call Sign listings in digital form, anticipated in 1998, so this annual book will have a new role. The title's a mouthful, but if you can't have a short, descriptive title, better to have one which says exactly what it is!

Apart from the title change, there are a number of changes to the content and format with this year's book, many of them significant. While previous Call Books were set out with reference material up front followed by the call sign listings, this year, the two sections have separate, identifying folio lines. There are more pages than the 1997 Call Book, the reference section expanding the most. Also, this year, the call sign listings have been printed in strict alphanumeric order, in line with international practice, rather than 2-letter/3-letter suffix order as in the past. What's more, the listings have been reproduced, unedited, from the ACA's public register of licensees. *All* the details are there, warts and all; 16,540 of them in the 100-page section. To improve readability, the listings have been typeset in upper and lower case.

The front end reference section has been looked at afresh. Some 14 items of popular and essential material has been retained and updated, including:

- a directory of Amateur Licence Examiners,
- the bandplans from MF (160m) to SHF,
- Australian beacons and repeaters from HF to SHF,
- Australian VHF-UHF records, WIA broadcasts, etc.
- operation of amateur stations.

There are 15 items of *entirely new* material, including:

- 6m beacons worldwide,
- 10m beacons and repeaters worldwide,
- NZ beacons,
- how to attach coax plugs right, first time,
- low frequency beacons, 200-400 kHz,
- RS232 connections,
- how to get started in packet radio,
- packet wormholes,
- full directory of packet radio systems,
- WIA worldwide Web sites, etc.

Only three items have been repeated: Australian and NZ TV channel frequencies, and the WIA affiliated clubs directory.

Right up front, there's a double-page spread promoting amateur radio to non-amateurs. The intention is that this can be photocopied for handing out at public events where amateur radio is promoted by local radio clubs or WIA Divisions, handed over together with club or Division contact material. It's visually-oriented, so it can be read quickly, but conveys an idea of the enormous scope available in amateur radio, the simplicity of the licensing system and how to get a licence.

The '1998 Radiocommunications Reference Guide and Call Book' is easily recognised. The cover is bright yellow! There are colour pictures on the cover, all radio-oriented. Despite the new title, new material and the 'new look' front cover, it's the same old price: $14.95, or $13 for WIA members. It's available through your state Division and selected Dick Smith stores.

Decline or growth?

With 16,540 licensee details published in the 1998 Call Book, just how many *individual amateurs* are there? Good question. A bit of database research reveals 367 licensees hold 1056 call signs (licences) between them. Breaking that down, 253 individuals hold multiple call signs (three seems typical), the other 114 licensees are radio clubs, WIA Divisions or other organisations (eg a state Scout Association). It appears some 52 organisations each hold a single licence. So, there are 15,851 individual licensees, of which 15,685 are held by individual amateurs.

So is amateur radio in Australia declining, growing or what? A similar exercise on the 1994 SMA amateur licensee register was quite revealing. There were some 19,200 'records' on that register. There were 16,604 on the ACA register supplied to the WIA in October. The 1994 register contains thousands of duplicate records; this year's register contained 64. In the 1994 register, each separate beacon and repeater transmitter frequency was entered as a separate record. Stripping the duplicates (leaving one record per call sign) yields just under 18,000 call signs. Some 1800 additional call signs were held by individual amateurs, while 165 licenses (call signs) were held by clubs, WIA and other organisations. Just doing 'straightforward' database searches can give misleading results, I found.

So, in 1994, it seems there were just over 16,000 individual licensed amateurs. There is some slight variability here owing to the uncertain number of amateurs and organisations holding multiple call signs registered at different addresses and that some club call signs are in the register as being held by an individual (ie club secretary or president).

So it appears that, since 1994, there may have been a slight (under two per cent) decline in the number of amateurs in Australia, despite the 'factual' disinformation being regularly circulated from some sources. Given the uncertainties, it would be safe to say amateur radio in Australia is holding its end up. What is the motivation of those sources?

Let's look at some trends in licence grades. The Novice Limited licence has shown good growth since its introduction. In the 1996 Call Book (using 1995 data), there were just 77 entries for the then-new licence sub-type. This year, there are 263. But that's to be expected with the introduction of a new licence grade, or sub-type (as the ACA calls them). The greatest growth was in VK3, from 11 to 69, followed by VK2 (25 to 73) and VK4 (21 to 54). A sampling of Novice Limiteds then (1995) and now shows that nearly a third of 1995 H-calls upgraded in the meantime.

There were 1985 Novice call signs listed in the 1996 Call Book (not counting an unknown number of complete suppressions of call/name/address). There are 1747 Novices in the 1998 Call Book. In each case, there are a few Novice call signs held by individuals in addition to another licence. Let's say they cancel out, near enough.

So it looks like there's been a decline in Novice licensees of just under 12 per cent between 1995 and 1997. However, taking a sample and looking for name/address matches, reveals some 10 per cent of 1994 Novice licensees upgraded since then. If any changed their address in the meantime, particularly if they moved interstate, they're all but impossible to track. So it could be reasonably said that, like the rest of the amateur population, Novice licensee numbers are probably holding their own or have declined very slightly.

Last chance!

By the way, the WIA 1997 recruitment and retention campaign closes this month. If you join before December 31, you go in a draw for a fabulous Fluke 12B digital multimeter worth $195, donated by Philips Test and Measurement. Eleven lucky new members from each month's intake to date have each won a Fluke 12B.

For existing members, if your membership renewal has come along recently, send in your sub and you go in the draw for a Kenwood TM-733A dual-band 2m/70cm FM/packet transceiver. This outstanding rig is worth $1255. Some of the tangible benefits of WIA membership...

If you buy R&C from your newsagent each month you pay $56.40 a year — that's not bad for a year's reading BUT if you take out a six-issue subscription you don't have to walk to the newsagent and take the chance of finding that it's already sold out — you will also save yourself several dollars — and even more with a 12-month or two-year subscription!!!

By any standard, RADIO and COMMUNICATIONS is pretty good value.

100 pages per month of information, news, reviews, projects and pretty much everything else of interest to CBers, amateurs, scanner operators, shortwave listeners and sundry other radio/communication related hobbyists.

It has by far the widest scope of any "communications" type publication available in Australia... and of course there are also the Classifieds. If you want to buy or sell communication equipment, R&C is the place in which to do it — but it often sells out within a couple of days of going on sale.

Why not save yourself the trip to the newsagent and have it home delivered for six issues? That way you're sure of receiving your copy each and every month and you'll save $4.50 at once! If you take a one-year subscription you get to $ave $9.00 — or a whopping $18.00 for a two-year sub! You save even more for three... *and beat any future cover price increase for the term of your subscription.* Sounds good?

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Radio and Communications

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Amateurs, CBers and hobby communicators of all kinds are invited to place a FREE classified in this section of the magazine. Amateur gear, CB radios, scanners, antennas, computers, wanted or for sale items, power supplies... it's all fair game. Note our policy, however, that readers who do not hold an amateur qualification may not advertise to purchase amateur transmitting equipment. So dust off that old relic and get busy with the biro. Your first 25 words are FREE, then it's just $4 per 25 words after that. Adverts must be clearly PRINTED. Please read and note the conditions below.

Readers of **RADIO and COMMUNICATIONS** may use the **CLASSIFIEDS** column to the extent of 25 words absolutely free! This offer applies only to private 'For Sale' or 'Wanted' classified listings, and to computers, software or computer peripherals and other hobby communications equipment — scanners, amateur or CB transceivers, etc.

A **limit of one classified** advertisement applies to each advertiser. **Any additional words must be paid for or the advertisement will not be accepted.** A nominal fee of $4 per additional 25 words or part thereof will apply. This fee should accompany your material if applicable. Please enclose this fee or your advertisement will not appear.

Your advertisement's **inclusion cannot be guaranteed**, but every effort will be made to place your advertisement in the issue following receipt of copy. The 25 words **must include your name and phone number.**

The publisher reserves the right to amend or reject any advertising material considered unsuitable for publication. No correspondence will be entered into.

DO NOT SEND TWO FORMS. ONLY ONE AD WILL BE RUN!

Repeat CLASSIFIEDS advertisements will be accepted for a fee of $4 for every 25 words — *including* the first 25. Once again, this fee should accompany your material.

Advertisements for **commercial goods** or services will not be accepted for publication in these classifieds pages. This classified section is for **private sales/purchases** only. **E-mail submissions are preferred.**

For details of **display advertising** elsewhere in the magazine phone our National Advertising Manager, Kate Shaw, on (03) 9752 6186

Readers should note that all advertisements are required to comply with the provisions of the Victorian Consumer Affairs Act of 1972. They should be aware that, under the above Act, Post Office box numbers can be published **only if the full name and residential address** of the box holder is supplied with the advertising material.

This form is to be used for all classified advertising material in RADIO and COMMUNICATIONS. Letters or faxes on plain paper requesting the insertion of a classified advertisement will not be accepted.

Classified telephone inquiries: Chris Edmondson (03) 9722 9666

Clip this form and post it to:

R and C Classifieds,
Box 1 Yarra Road,
Wonga Park,
Victoria 3115

You can fax your ad of *25 words or less* to (03) 9725 6262 — but if you fax your ad, please don't post or e-mail it as well!

IMPORTANT NOTICE: Unsuitable material includes advertisements for wanted amateur transmitting equipment where no valid amateur call sign is shown, 'for sale' equipment modified for general coverage transmit, etc.

FREE

PAY $4

ONE WORD PER BOX!!!

January issue deadline: 5 December, 1997

BELOW IS NOT FOR PUBLICATION, BUT THE DETAILS MUST BE COMPLETED OR YOUR CLASSIFIED *WILL NOT RUN*

Your name: _____ *Amateur call (if any):* **VK** _____

Residential address: _____ *Phone contact*: ( )* _____

_____ *State* _____ *Code* _____

Your signature: _____ *Today's date: / /* _____

* This number is for the editor's use only — to check any details. State if business or after hours number. *NOT* for publication!

...CLASSIFIEDS...CLASSIFIEDS...CLASSIFIEDS...

ADVERTISERS PLEASE NOTE

All classified advertising copy is typed in by a non-amateur typist who, reasonably enough, cannot decode illegible writing. In short, she types what she sees, and if your writing is poor you can expect either crucial errors, or the non-appearance of the advert. PLEASE ENSURE THAT YOUR CLASSIFIED IS LEGIBLE. ALTHOUGH YOU KNOW WHAT YOU'RE ADVERTISING A TYPIST DOESN'T!

CAVEAT EMPTOR — BUYER BEWARE

*The acceptance of classified advertisements in the **Radio and Communications** classified advertising section does not warrant in any way that the goods offered are available, free of any encumbrance, in working order or otherwise satisfactory. The purchase of goods by private sale does not offer the purchaser any protection under law, and buyers should be certain the goods under consideration are suitable for the purpose for which they are required. **Radio and Communications** cannot accept any responsibility for goods advertised in the classified pages and no correspondence will be entered into regarding such goods.*

The onus is on you...

VK1 AREA

• **Deceased Estate** VK1DH: **Kenwood** TS-930S HF xcvr $850. Matching MC-60 mic $50. Buyer to collect. Peter, VK1JI (02) 6258 4757. Licensed amateurs only.

VK2 AREA

• **Complete shack**: **Kenwood** TS-940S HF xcvr, approx 15-20hrs use, like new with brand new SM-220 monitor & BS-8 bandscope, new in boxes, never connected, also matching SP-940 filtered spkr & MC-60 desk mic. The lot $3250, with all boxes, circuits. **Icom** IC-575H 6 & 10m xcvr, 100w, as new cond $1750. **Kenwood** TS-790A tri-band satellite xcvrl, all modes, had six contacts only, is as brand new $2600. **Kenwood** TS-811B 70cm all-mode xcvr, EC $1100. **Motorola** Syntrx 2m mobiles (two) both with all NSW repeaters, 28w approx with scan etc, very clean $250ea. **Daiwa** 2m amp with preamp, 5w in 90w out, with built-in fan, brand new in box, never used with mobile mount $450. **Kenwood** TS-700SP all-mode 2m xcvr, digital readout, built in pwr supp $650. **Also**: Aron BS-635 35MHz double beam CRO, as new $350; Tech Audio generator $80; Tech signal generator $80; BK Precision solid state sig gen by Dynascan USA model E-200D 100kHz-216MHz in 7 bands, all metered etc top quality generator $250. All items include handbooks, most with workshop manuals, orig boxes. All items are as new or EC; all being sold due to ill health. VK2BW (02) 4861 2092, fax (02) 4861 1536

• **Heathkit** SB-200 linear amp. Has matched pair of 572B tubes. Ian, VK2PKB (02) 4932 8935. Licensed amateurs only.

• **Hills** 90ft+ winch-up tower, EC with new guying kit $950. **Hy-Gain** 402BA 40m Yagi $550. Lee, VK2ANS (02) 9636 9060

• **Icom** IC-725 HF xcvr with svce & owners manuals, mobile brkt, mic & cables. FM board fitted $800. Mick, VK2BH (02) 6654 3195. Licensed amateurs only.

• **Kenwood** TS-140S HF xcvr with book & mobile brkt $1000 ono. Gerry, VK2DKW (02) 9823 5929

• **Kenwood** TS-430S HF xcvr, 0 to 30 MHz, exc cond with manuals $850. **Kenwood** TS-440S/AT HF xcvr with inbuilt auto ATU. Covers 0 to 30 MHz, has had very little use, complete with manuals $1200. **Kenwood** TS-600 all-mode 6M rig in mint cond with manuals, also with very little use. Mike, VK2CM (02) 9525 8888 or 041 959 5888. Licensed amateurs only.

• **Kenwood** TS-43X HF xcvr with SP430 external speaker. Works well, $490 ono. Jon, VK2JFE (02) 9456 5805 A/H (02) 9210 4459 B/H. Licensed amateurs only.

• **Kenwood** TS-440S/AT HF xcvr, late model with svce manual, MC-43S mic, MB-430 mobile bckt EC $1300 the lot. **Kenwood** TS-830S HF xcvr, WARC bands, spare 6146B PA tubes $850. James, VK2AJR (014) 03 9685. Licensed amateurs only.

• **Kenwood** TS-50S HF xcvr with AT-50 auto tuner, as new $1750. **Kenwood** TM-2570A 2m FM mobile $250. **Uniden** HR-2510 10m mobile $300. **Yaesu** FT-26 2m FM HT — offers? Taylor, VK2AOE (02) 9449 6364. Licensed amateurs only.

• **Power** line noise filter, ANC-4, covers 100kHz-80MHz reduces noise by 50dB, still in box, never used $350. Brett, VK2FZR (02) 6672 4771

• **Power supply** new 13.8V 20-30A, regulated, over-voltage protected, extra heavy duty, fan-cooled $250. Ian, VK2AVS (02) 6672 2462

• **Realistic** HTX-100 10m monoband xcvr, 25W output, 10 mems, packet ready, mic channel select, mint cond, two for sale $300ea. Michael (02) 9540 2843. Licensed amateurs only.

• **Video camera**: latest model Sony Hi-8 CCD-TRV-101E, brand new in box with all extras. Unwanted gift, never used, cost $3300, sell $2600 ono. Rob, VK2PRL (02) 4884 4213

• **Wanted**: Deko Sections. Lee, VK2ANS (02) 9636 9060

• **Yaesu** FT-290R 2M all-mode portable xcvr with 35W linear $375. **Diamond** F-23A 2M high-gain (3X5/8-wave) vert base station antenna $120. **Sincon** 90w 2m amp $120. **Yaesu** FT-757AT auto ant tuner $350. Keith, VK2BK (02) 4381 1844. Transmitting gear sold to licensed amateurs only.

VK3 AREA

• **Aerocom** linear 2kW input over 2-25MHz, 4 bands, may be remote-controlled. Has 3-1000Z tube, one new tube & one s/hand tube, buyer to collect $500. **Johnson** matchbox tuner 3kW $200. Stan, VK3BAB (03) 5127 8382. Transmitting gear sold to licensed amateurs only.

• **AVO** meter model 8, high sens $60. **Hewlett Packard** audio sig gen 5Hz to 600kHz. Both in GC. Mike, VK3AJD (03) 9306 9771

• Here we go again! One of (almost) everything, including... **Yaesu** FT-101ZD HF xcvr $550, FV-

... ☞

Please note that all phone numbers are AFTER HOURS unless otherwise noted.

101Z ext VFO $120, FV-101DM digital ext VFO $175. **Yaesu** FT-101B HF xcvr $250. **2m HTs: Icom** IC-2GAT $280; **Yaesu** FT-209RH $180; **Yaesu** FT-209R $150; **Yaesu** FT-23 $150; plus **Yaesu** FT-223 2m Xtal'd mobile, has RPT2-8, 50 & 51 $95. **Cushcraft** A-3S 3-el tribander $550. **Philips** FM-321 70cm mobile $150. **AWA** RT-80 VHF hiband $40. **Leader** 10MHz CRO $150. **Star** tx/rx pair: ST-700, SR-700 $350. **AWA** F-242 distortion analyser $800. **HP**-331A dist/anal $600. **Logimetrics** digital sig-gen, counter 50kHz-80MHz $550. **Techtronix** type 140 NTSC generator $190. **Freq** counter DC-500MHz $150. **Leader** ATU 250w $175. **Techtronix** model 525 curve tracer $380. **NJZ**-900 JRC analogue phone tester $2300. **Siemens** model 100 teleprinter $free! **Valves** 2C39A $50, 4CX350F $180. **Bird**-type plug-in modules $100ea. Various test equip for sale. Lee, VK3GK (03) 9544 7368 or 015 81 0101. Transmitting gear sold to licensed amateurs only.

• **Icom** IC-275H 2m all-mode 100w base xcvr. Has 9600 packet, passband tuning, 100 mems etc GC $1500. **Daiwa** MR-750 rotator GC $500. **Hidaka** 3-el triband HF beam $100. **Tomlinson** 22-el 2m cross-Yagi $120. **Kenwood** TS-440 svce manual $25. **Kenwood** IF-10A computer interface suit TS-711 or 811 etc $70. **Kenwood** MB-430 mobile mount, suit 430, 440 etc $35. **Tomlinson** 2m vertical (Ringo copy) EC $50. Trevor, VK3KEG (03) 9785 9569. Transmitting gear sold to licensed amateurs only.

• **Icom** IC-725 HF xcvr, EC $900. **Icom** IC-706 HF/6m/2m all-mode xcvr $1700. **Kenwood** TM-731A dual-band VHF/UHF xcvr $850. Bill, VK3WK (03) 5561 1376. Licensed amateurs only.

• **Icom** IC-730 HF xcvr with WARC bands, hand & desk mics, svce manuals $650. **Yaesu** FT-408R 2m all-mode xcvr with mobile mount & manuals $375. **Kenwood** TS-660 quad-band xcvr with manuals, needs finals — offers? **Kenwood** AT-520 ATU $100. Kev, VK3JKT 0418 14 8250. Transmitting gear sold to licensed amateurs only.

• **Kenpro** KR-500 elevation rotator $380 ono. **Kenpro** KR-250 light duty rotator $190 ono (both new). Sorry, no phone, please write to Eric Irvine, VK3BXA, RMB 55435, Benalla 3673

• **Kenwood** TM-742A dual-band (optionally multi-band) 50W FM xcvr, currently with 144-148 & 430-440MHz. Has internal space & front panel controls for optional third band: 10 or 6M or 23cm. Has had home use only. EC $1025. Len, VK3BMY (03) 5862 3116

• **Kenwood** TS-870S HF xcvr, 10mths old with PS-52 DC power supp $3250. Jim, VK3NR (03) 9367 6920. Lic amateurs only.

• **Wanted**: Atlas HF xcvr, 12V operation, either model in GWO. Gerhard, VK3EWU (03) 9439 8353

• **Wanted**: manual or copy of manual, circuits etc for **Heathkit** digital weather station, model IDW-4001. Will pay reas costs but please call first. Mark, VK3ZMS (03) 9578 8411

• **Wanted**: Old mic by collector, working or not, Astatic, Turner, Electro-voice, Shure etc, also Vibroplex & telegram apparatus to CW keys & bugs. George, VK3YSU 015 35 7402

• **Yaesu** FT-208R 2M HT in EC. Has 10 mems, runs 2.5w. EC $180. Orm (03) 9723 4688. Licensed amateurs only.

• **Yaesu** FT-707 HF all-band xcvr. Includes QARC bands. **Tokyo** HyPower all-band antenna coupler. Rated at 75W PEP $50 ono. Perc, VK3VVI (03) 5562 3948. Transmitting gear sold to licensed amateurs only.

• **Yaesu:** rare opportunity to own dedicated 'collector quality' Yaesu station. FT-101ZD HF xcvr with FV-101DM dig/mem VFO. FTV-901R xvrtr fitted with 2M, 6M & 70cm modules. FC-901 antenna tuner. YP-150Z 6-150W dummy load. SP-901P ext/pch/spkr. YM-38 desk scan mic. All this plus an FT-901D HF xcvr with YO-901 multiscope analyser, FV-901 synth scanner, 40 mems (incl CB rx), YM-33 desk mic. Complete with all books, xcvr boxes, hand mics, and two complete sets of spare valves. All set up in its own matching furniture. Conservatively, station value approx $6000. Will not separate at this stage. Offers around $5000 ono considered. Bill, VK3WEG (03) 9417 5523. Licensed amateurs only.

Australian Radio DX Club

The Central Coast Amateur Radio Field Day will be held on Sunday, 22 February, 1998, at the Wyong Racecourse. Gates open to the public at 8am. Heaps of parking, railway station 200 yards away.

The Austalian Radio DX Club will, as usual, have a stand, showing the working displays of valve radio receivers of yesteryear, shortwave and medium wave SWLers and DXers. Also an empty trailer will be available, for donations of equipment or $$$ for your boatanchor receivers of yesteryear, working or not. See John Wright (Johno). Free handouts of info avil & much more.

For info call (02) 9525 8901 or email dxer@fl.net.au

QSL Collection

QSL donations from silent key estates & generous amateur operators to the Federal WIA QSL National Collection very welcome. Please contact the Honorary Curator of the collection, Ken, VK3TL (03) 9728 5350

VK4 AREA

• **Kenwood** TS-820S HF xcvr, with ext VFO-820 VFO, FC-902 ATU, SP-520 spkr, MC-50 mic, 5-band vertical antenna, coax leads & manuals, Kenwood serviced $900. Ron, VK4LI (07) 3264 2127. Licensed amateurs only.

• **SGC** SG-230 'Smartuner' auto longwire or whip antenna tuner. New, has never had power applied. Cost $850, sell $750. David, VK4ADP (07) 3802 1152

• **Swap** 50ft lattice tower, windup sections, VGC, for HF xcvr, digital, prefer TS-130S or sim, or make an offer. Rob, VK4GX (07) 3886 4703

• **Swap** Yaesu FT-301 HF xcvr with manual (works fine!) for Heathkit, Swan, Drake, Galaxy, Johnson, Ten-Tec items for collection. *Not* a dealer... Doc, VK4CMY (076) 83 2004

• **Wanted**: Common core manuals, basic electricity, also basic electronics trainer tests, adjunctive programming supplement, US navy or British forces editions. Colin, (07) 3284 5921

VK5 AREA

• **Wanted**: Midland 70-1336B high-band programming softwre or info. Will pay all costs. Bill, VK5ACY (08) 8559 6037

...CLASSIFIEDS...CLASSIFIEDS...CLASSIFIEDS...

VK6 AREA

• **Gap** vert antenna: Titan 80-10m, used for 3mth. $300, no radials. **TET**-Emtron 2-el triband Delta loop 20-15-10, used 3mth. $100. Bernd, VK6WO (08) 9359 1247

• **Yaesu** FT-726R all-mode VHF/UHF satellite xcvr. Fitted with 6 & 2M & 70cm modules, plus the all-important satellite module. A most desirable satellite station for just $1400. **PacComm** TNC-320 HF/VHF dual-port packet TNC $150. John, VK6NU (08) 9446 1345. Transmitting gear sold to licensed amateurs only.

VK7 AREA

• **Icom** IC-736 HF+6M xcvr inc gen cov rcvr, built-in pwr supp, auto ATU, as new with boxes & manuals $2350. **FL**-102 AM filter $65. **Comp** Pakratt RS232 convertor, cartridge suit C-64 or C-128. Allen, VK7AN (03) 6327 1171 or 0417 35 4410. Transmitting gear sold to licensed amateurs only.

• **WiNRADiO** computer-card receiver. New model with spec analyser, covers 500kHz to 1300 MHz all modes. Still in box $500. Save $199! **RFDS** 100W HF 2-way fitted with 2020, 4010, 4055, 5410, 8707 Radphone chnls & R&DS emergency call $900. **Sony** ICF-6800W HF plus FM b/cast band $350. **UHF** repeater 450-520 $600. **Systron** Donner svce monitor $750. Rick (03) 6496 1240

VK8 AREA

• **Yaesu** FT-7 HF xcvr mobile $300. Steve, VK8MSG (08) 8932 8427. Licensed amateurs only.

Rarotonga, Cook Islands

Cook Islands Amateur Radio Club, PO Box 663, Rarotonga, Cook Island, South Pacific.

The club is a great place for visitors to meet local amatuers & radio enthusiasts. A warm welcome is guaranteed. No joining fee. Enjoy a swim amongst lush tropical garden setting in full size pool. Club can arange meetings & skeds with Outer Island Amateurs & discounted travel to the Outer Islands. Full Amateur Shack at Club House with excellent antennas available.

Club can organize local ZK radio license whilst visiting. Original VK Amateur Operators Certificate of Proficiency must be produced; a copy not acceptable. To obtain your ZK license to operate in the Cook Islands, NZ$20 per annum fee.

Further information from John Abbott, ZK1AX (Club Secretary). Tel. 0011-682-22190, fax 0015-682-20964 or above postal address. General Brochure/details : On visiting the Cook Islands contact Cook Island Tourist Authority, Sydney (02) 9955 0446, fax (02) 9955 0447

CB radios and antennas, scanners and comms receivers

• **Car** radios & CBs from $5. Nick 0418 24 5640

• **Emtron** ACE UHF CB $180. Lee, VK3GK (03) 9544 7368 or 015 81 0101

• **Icom** IC-R72A comms rcvr, EC, as new $600. Ian (02) 9630 6610 or 0418 88 9990

• **Optoelectronics** R10 Interceptor with power supply, as new in box $400. Berge (02) 9922 4200

• **Pearce Simpson** Super Puma SSB/AM $100. **Voicecraft** power/rodger beep mic & echo/power mic $25ea. All EC, orig pack, manuals. Brian, VK2MQ (02) 6947 1213

• **Philips** P65 UHF HT CB xcvr, 5W with p/supply leather case, as new $400 ono. Drew (02) 9922 4200

• **Uniden** Sundowner UHF CB xcvr $225. VK2AOE (02) 9449 6364

• **Uniden** UH-057 UHF HT with Selcall, batt chrgr & batt eliminator, PC $450 neg. Robert (02) 9660 7549

• **Unwanted** CB radio gear. Microphones, dummy loads, mic inserts, final transistors, antennas, RF adaptors, *CB Actions* from Jan 1993 to June 1995. Paul, VK5MAP (08) 8651 2398

• **Wanted**: Operator's manual for Regency Touch M-400 scanner mobile base. Will pay copying... anywhere... desperate! Bob McFadyen, 140 Olsen Ave, Arundle, Gold Coast 4215 or (07) 5571 7383

• **Wanted**: Power-operated motorised wing aerial for mobile CB 27MHz. Peter Heywood, PO Box 2044, Oakleigh 3166 or phone 019 16 9726

• **Wanted**: Sony CRF-330 ICF-6800W CRF-1, ICF-200D Grundig satellite 650, Sony timer unit for CRF-1, orig Sony advertising literatire, Sony TC-D5 Pro recorder. Sam, (08) 8449 9902

• **Wanted**: Yaesu FRG-100 comms rcvr for fair price. Must be in GWO, Sydney only. Martin (02) 9528 6079

• **Yaesu** FT-7700 comms rcvr with FRT-770 tuner. Ideal for the SWL! $600 ono. Bill, VK3WEG (03) 9417 5523

• **Uniden Bearcat** UBC9000XLT 25-1300MHz scanner EC $350 ONO. **Sangean** ATS-818CS shortwave receiver with cassette EC $200 ONO. Steve VK8KCK (08) 8945 6797

• **Wanted**: CTCSS tone board to suit Uniden Bearcat UBC-9000XLT scanner. Must be in wkg order. Russell Bryant, PO Box 344, Springwood, NSW 2777

• **Wanted**: Scanner freq lists for the UK & Ireland. Stephen, PO Box 524, Sans Souci NSW 2219

• **Yaesu** FRG-7 comms rcvr 0-30MHz, GC, urgent sale. $250. Brett (02) 6681 1365

• **Yaesu** FRG-7 HF rcvr $150, Tony, VK2BTS (02) 6642 3641 a/h, (02) 6643 0243 b/h

• **Yaesu** FRG-7700 rcvr with FRA-7700 active ant, as new with hndbk $450 ono. Must sell, can deliver, cons swap. Simon, VK3HOT 0419 37 5409 or (03) 9852 2082 A/H

Please note that all phone numbers are after hours unless otherwise noted.

Scanaircomm

Wanted: Active members for Scanaircomm, the Airband communications monitors group, details avail from Scanaircomm. PO Box 50 Dungog 2420 Aust.Wide freq guide avail.now.

UHF CB REPEATER LIST

NEW SOUTH WALES

Callsign	Town/Locality
Channel 1	
BEL01	Belbora
BHI01	Broken Hill
BIN01	Bingara
BOB01	Harden
BRE01	Brewarrina
BRH01	near Broken Hill
BUN01	near Merriwa
CHT01	Charlestown
COR01	Corowa
DNQ01	Deniliquin
GRE01	Grenfell
GUY01	Guyra
JIN01	near Jindabyne
KGL01	Kyogle
MBI01	Moonbi
MRT01	Wilcannia
MTE01	Mt Eagle
NEE01	Dubbo
NIM01	Nimmitabel
NYN01	Nyngan
RYL01	Rylestone
SYD01	Kirrawee
ULA01	Ulladulla
WAG01	Wagga
WGT01	Walgett
Channel 2	
BER02	near Gloucester
BRH02	Broken Hill
CAN02	Cangai — west of Grafton
EDN02	Bega / Eden
GDH02	Gunnedah
INV02	Inverell
KHN02	Khancoban
KOS02	near Thredbo
KUR02	Sydney — Kurrajong
LGW02	Mt Lambie
LIS02	near Byron Bay
MAC02	Port Macquarie
NBR02	Wee Waa / Narrabri
NOW02	Nowra
PAR02	Parkes
VRB02	Urbenville
WAL02	Walcha
WAN02	Wanaaring
WBD02	Walbundrie
Channel 3	
CAN03	near Orange
CAS03	Casino
COM03	Mt Kophi
CON03	Conargo
DUN03	Dungog
GIL03	Braidwood
MDI03	Murrurundi
MNA03	Manilla
MOR03	Moree
MTI03	Tubramurra Shire
PLO03	east of Armidale
RWT03	Hay
SYD03	Blacktown, Sydney
TEN03	Tenterfield
Channel 4	
ARM04	Armidale
CBN04	Coonabarabran
DRK04	Girard
GLB04	Goulburn
HAY04	Hay
MON04	Kandos — near Mudgee
MUS04	Muswellbrook
OGU04	Ogunbi — near Tamworth
RIV04	Sydney outer-west
SOU04	near Cooma
THA04	near Broken Hill
TUL04	Tullibigeal
TWH04	Banora Point
WAN04	Mt Wandera
???04	near Nabiac
WAR04	Warialda
YNG04	Young
Channel 5	
	EMERGENCY REPEATERS
BIN05	Blue Mountains
BKE05	Mt Gunderbooka
CAP05	near Tenterfield
CHN05	Charlestown
COR05	Corowa
FOR05	Mount Tallabung
FRA05	Bellingen
GLB05	Goulburn
JIN05	Jindabyne
MTS05	Narromine
MTU05	S-west Slopes, east River
OXY05	Bourke
SYD05	Sydney (far north)
TAM05	Tamworth
TBO05	Mt Talbingo
Channel 6	
BAR06	near Narrabri
BON06	Bonshaw, Q/NSW border
COF06	Coffs Harbour
COL06	Oakey
GGG06	Glengary
LGW06	Lithgow
MAL06	Mallanganee
MTG06	Bowral
MUM06	Mumbulla Mountain
NAR06	Narromine
NEW06	Sugarloaf Range
ROB06	Mt Robert
TUM06	Snowy Mountains
WAL06	Walcha
WEN06	Tolarno
Channel 7	
BAL07	Buckombil Hill
BO007	Booral — near Bulahdelah
BOM07	Bombala
COW07	Cowra
GLH07	Glen Lyon
GLI07	Glen Innes
MIL07	Milton
NUN07	Nundle — near Tamworth
SYD07	Chatswood, Sydney
WAL07	east of Walcha
Channel 8	
BAT08	Bathurst
COB08	Cobar
CON08	Condobolin
EUC08	near Eucumbene
GLE08	Glen Innes
GRE08	Gresford — near Dungog
GRF08	near Grafton
KEM08	Kempsey
MER08	near Merimbula
MUR08	Tomewin
NAR08	Narrandera
ROB08	Illawarra
TBC08	Tooleybuc
URA08	Uralla — near Armidale
WAL08	Walcha
WOY08	Kariong

NORTHERN TERRITORY

Callsign	Town/Locality
Channel 1	
ALS01	85 km SE of Alice Springs
BPK01	90 km N of Alice Springs
DRW01	Darwin
KVB01	Double Hill
MLG01	Milingimbi
Channel 2	
DDB02	Garibaldi Station
SWN02	150 km NNE of Alice Springs
Channel 3	
ELK03	325 km NE of Alice Springs
ERL03	185 km SSW of Alice Springs
MMI03	Mistake Creek Station
Channel 4	
DPW04	70 km S of Alice Springs
MST04	110 km S of Alice Springs
Channel 5	
	EMERGENCY REPEATER
VJP7	Alice Springs
Channel 6	
HEN06	120 km SW of Alice Springs
Channel 7	
AMB07	85 km SE of Alice Springs
ASP07	Alice Springs
Channel 8	
None assigned	

The following frequencies are the repeater input channels:

Input	Frequency (MHz)	
31	477.175	
32	477.200	
33	477.225	
34	477.250	
35	477.275	** emergencies
36	477.300	
37	477.325	
38	477.350	

These are the assigned repeater output channels:

Output	Frequency (MHz)	
1	476.425	
2	476.450	
3	476.475	
4	476.500	
5	476.525	** emergencies
6	476.550	
7	476.575	
8	476.600	

QUEENSLAND

Callsign	Town/Locality
Channel 1	
ANN01	St Annes Range
BAR01	near Barcaldine
BAT01	Bathurst Heads
BNE01	Mt Cotton
DEL01	Collinsville
HAN01	Hannaford
HUG01	Hughenden
ING01	Inglewood
INN01	Innisfail
MDT01	Middlemount
MOR01	Mt Hope
OWN01	Mt Oweenee
RKY01	Mt Archer
ROM01	Mt Bassett
SPC01	Windorah
TSV01	Townsville
TTH01	Twin Hills
WBB01	Mt Perry
WCT01	Charters Towers
VHS06	Imbil
Channel 2	
GLD02	Gladstone
GLN02	Glenden
ING02	Mt Cordelia
JCK02	Julia Creek
LAU02	Laura
MAB02	Broadsound Range
MIN02	Glenlyon Dam
POR02	Drummond Range
SPC02	Bowen
TAM02	Tambo
TAR02	Taroom
TRN02	Quilpie
TWB02	Mt Kynoch
WAG02	Aranyi south
WAV02	Wavell Heights
WBR02	Gunalda
WON02	Cogango Range
Channel 3	
ABC03	Gold Coast
CHI03	Chinchilla
CTS03	Charters Towers
INK03	Mt Inkerman
KIL03	Kilcoy
LAI03	Mt Beau Brummell
MBO03	Tinana
MTO03	Monto
MTW03	Mt William
PCC03	Edward River
SPR03	Springsure
VHO3	Mt Isa
Channel 4	
BBG04	Sloping Hummock
DIP04	Double Island Point
EID04	Eidsvold
GDI04	Goondiwindi
HOP04	Rockhampton
IPS04	Ipswich
JER04	Jericho
MBH04	Moranbah
MOW04	Darling Downs
TSV04	Townsville
VHN4	Expedition Range
VHW4	Cannonvale
Channel 5	
	EMERGENCY REPEATERS
ABC05	Springbrook
BNE05	Mt Glorious
CEM05	Clermont
FSB05	Mt Goonaneman
GEM05	MtWolvi
ING05	Mt Cordelia
MIL05	Commodore Peak
QBM05	Darling Downs
ROK05	Rockhampton
VHN05	Charters Towers
VHP05	Biloela

Channel 6

BLK06	Blackdown Tablelands
BLL06	90km SW of Blackall
BRA06	Sea View Range
CBT06	Mundubbera
CHT06	Mt Janet
CLE06	Police Mtn
CNE06	Bergen
DIM06	Mt north Iron
MIL06	Palardo Hill
MKY06	Mackay
PRR06	Clermont
RIC06	Yan Yean
TAM06	Tambo
THG06	Thargomindah
VHN06	Wilkes Knob
VHP06	Ispwich (central)

Channel 7

BIL07	Banana Range
BLL07	East of Blackall
BNE07	Mt Coot-tha
CTR07	Towers Hill
DMD07	Clermont
ESK07	Esk
GEM07	Gympie (Portable)
IND07	Fraser Island
ING07	Mt Mercer
MUR07	Mt England
VHO7	Mt Hutton
WBB07	Mt Watalgan
WRA07	Warwick
YKA07	Mt Slowcombe

Channel 8

AMI08	Amiens
BAL08	Noondoo
BLL08	Blackall
CHN08	Mt Peanga
CHT08	Charters Towers
DAW08	Comminglah
EMD08	Emerald
HBY08	Ghost Hill
MBR08	Mt Brisbane
NCR08	Rockhampton
NEB08	Nebo
ONV08	Ocean View
TLD08	Atherton
VHN08	Barkly Down

SOUTH AUSTRALIA

Callsign Town/Locality

Channel 1

CDA01	Ceduna
MJN01	Oodnadatta
MTR01	Leigh Creek
PAR01	Adelaide (north)
PRC01	Carrieton (north of Orroroo)
TYN01	Oodnadatta
VLA3	Crystal Brook

Channel 2

BOR02	Bordertown
BRP02	Orroroo
CLV02	Cleve
MYP02	Myponga
VLA4	Kingoonya

Channel 3

ADL03	Adelaide (Central)
ALN03	Yunta
BLN03	Blinman, Flinders Ranges
CTR03	Moonta
KBY03	Port Elliot
UNO03	Port Augusta

Channel 4

BAR04	Nuriootpa
BLF04	Port Pirie
KOK04	Lake Gairdner west
NAR04	Lucindale
PKI04	Kangaroo Island / Leigh Creek (north-east of)

Channel 5
EMERGENCY REPEATERS

ADL05	Adelaide suburb
BEE05	Crystal Brook
EUD05	Eudunda
MNT05	west of Woomera
MTG05	Penola/Mt Gambier

Channel 6

LST06	Elliston (Eyre Peninsula)
NON06	120 km west of Port Augusta
REN06	Renmark
SNO06	Snowtown (near Port Pirie)
TIN06	Coonalpyn
WKI06	Kangaroo Island
WLG06	Tarcoola
WLP06	Willpena

Channel 7

CLR07	Clare
MTG07	MtGambier
MUT07	south of Cockburn
UNO07	Kyancutta
VLA7	Streaky Bay
WIL07	Hawker
YKP07	Warooka

Channel 8

BRYY08	Burra
GIL08	Port Giles, York Peninsula
MBV08	Murray Bridge
MTA08	Quorn
PTL08	Tumby Bay/Port Lincoln
	Oodnadatta (200 km SW)
	Yalata (187km NW Ceduna)
call?	Coober Pedy

TASMANIA

Callsign Town/Locality

Channel 1

DEV01	Devonport
FIS01	Flinders Island
SET01	Mt Faulkner

Channel 2

CHN02	Herring Back
LCN02	Launceston
TWC02	Mt Read

Channel 3

NEC03	Ben Lomond

Channel 4

MID04	Millers Bluff
TWC04	Savage River

Channel 5
EMERGENCY REPEATERS

HBT05	Hobart
LTE05	Longford
TER05	Kentish

Channel 6

REC06	Mt Paul
VJA6	Mt Lloyd
WCT06	St Valentines Peak

Channel 7

CHT07	Barren Tier
TNE07	Mt Victoria

Channel 8

BRN08	Burnie
TNE08	St Marys

Simplex repeater

VSH13	Deloraine

VICTORIA

Callsign Town/Locality

Channel 1

ALX01	Eildon
APS01	Apsley
MEL01	Melboume
OME01	near Omeo
ROU01	Penshurst
STA01	St Arnaud
WAL01	Walhalla

Channel 2

BAL02	Ballarat
KER02	Mt Kerang
MAN02	Mansfield
MOE02	Moe
PYA02	Pyalong

Channel 3

ABE03	Aberfeldy
DEL03	Bombala
FAL03	Falls Creek
HOR03	Horsham
	Melbourne
WBT03	Mt Wombat
WPH03	Weeaproinah
YLA03	Yelta

Channel 4

ARA04	Ararat
BEN04	Bendigo
CRJ04	Traralgon
HAW04	Hawkesdale
MCA04	Marambingo Hill
WOD04	Wodonga

Channel 5
EMERGENCY REPEATERS

BAL05	near Ballarat
MAN05	Mansfield
MEL05	Melboume
RFY05	Ruffy

Channel 6

BRN06	Mt Concorde
ECH06	Echuca
FOS06	Mt Fatigue
HLV06	Healesville
MSS06	Mt Seldom Seen
SWH06	Swan Hill
WAN06	Wangandry
WIL06	Mt William

Channel 7

BND07	near Ballarat
BOL07	Mt Bolton
MEL07	Melbourne
MOR07	Mt Shadwell
MVL07	Mt Gordon
SHP07	Shepparton
TAL07	Mt Granya

Channel 8

ART08	Safety Beach
DUN08	Cavendish
HAR08	Mt Alexander
MCN08	Mt Cann
MYR08	Mt Porepunkah
TER08	Mt Terrible

WESTERN AUSTRALIA

Callsign Town/Locality

Channel 1

COL01	Collie
DEN01	Denmark
GER01	Geraldton
KAM01	Kambalda
KAT01	Katanning
KLB01	Kellerberrin
LEN01	Leonora
MIA01	Mia Mia Station
MKT01	Poison Hills
PER01	Perth
WAR01	Warakuma
WIK01	Wickham

Channel 2

BIN02	Bindoon
BUN02	Near Bunbury
CAR02	Carnamah
KAL02	Mt Charlotte
LYN02	Lyndon Station
MRD02	Merredin
VLN5	Mt McLure
WLP02	Walpole

Channel 3

ALB03	Albany
CLA03	near Carlotta
NOR03	Nannup
PER03	Roleystone
VET03	near Bardoc

Channel 4

BYB04	Dinninup
ESP04	Esperance
GNG04	Lancelin
KUL04	Kulin
MTB04	Cranbrook
NEW04	Newman

Channel 5
EMERGENCY REPEATERS

MTR05	Mt Barker
PER05	Orange Grove
VLN6	Perth

Channel 6

DAR06	Darkan
JUR06	Mt Lesueur
MGR06	near Margaret River
MNP06	Albany
MTS06	Mt Solus
Vkm06	Wyalkatchem

Channel 7

BDG07	Bridgetown
C0007	Coolgardie
MGR07	Augusta
MTB07	Stirling Ranges
PIN07	Pinjarra east
VRK07	Mt Eakewell

Channel 8

MAN08	west Manjimup
MSA08	Mt Saddleback
PER08	Kalamunda
QUN08	Quinorlup
RVT08	Ravensthorpe

A.C.T.

Callsign Town/Locality

Channel 1

CBA01	Canberra (Portable)

Channel 2

CBA02	Isaacs Ridge

Channel 7

GIN07	Mt Ginini

Channel 8

CBA08	Isaacs Ridge

REPEATER UPDATE

To maintain the UHF repeater list in an up-to-date manner requires the co-operation of repeater owners and local users. Please ensure that when an error is found, or an update is required, that you contact:

Trevor Colwell, ACBRO Inc.,
PO Box 170,
Walkerville, South Australia 5081

who will ensure that this information is included in the next repeater list.

Next month: more amateur repeaters

FT-51R 2m/70cm HANDHELD

"... a great little radio." R&C June 96

FT-51R Shown actual size

The exciting FT-51R is Yaesu's third generation 2m/70cm dual-band FM hand-held. With more features and even easier operation than ever before it comes in a size that comfortably fits in the palm of your hand. It's tough polycarbonate front panel and diecast rear casing combines cellular styling with professional grade ruggedness for reliable everyday use, while its new dual-processor design provides really useful new functions such as a Spectrum Scope and scrolling Help messages.

Measuring just 123 x 57 x 26.5mm (W.H.D), the FT-51R provides 2m/70cm Amateur transmit coverage, plus extended receiver coverage of 110-180MHz and 420-470MHz, with selectable AM for Airband reception. The FT-51's two receivers allow flexible VHF+VHF, UHF+UHF, or VHF+UHF operation, while the efficient FET technology provides 2.0W RF output on 2m and 1.5W output on 70cm from the supplied 4.8V 600 mA/H NiCad battery pack. Up to 5 selectable TX power levels are available (including an economy 20mW level), with 5W RF output available when using an optional 9.6V battery pack or mobile power adaptor.

To find local activity easily, the FT-51Rs "spectrum scope" provides a visual indication of nearby busy frequencies, so you can keep an eye on whether a repeater or simplex channel may be in use. The Spectrum Scope can also be used in memory mode, and will even give an indication of signal strength. In addition to twin VFOs per band, the FT-51R also provides up to 120 memory channels, and alpha-numeric names (eg. Repeater locations or call signs) can be stored instead of a frequency if required.

For very straightforward operation the FT-51R provides scrolling User Help text messages that guide you through most function settings, as well as a selectable Auto Repeater Offset function to suit the Australian band plans. Other features include a range of battery life extender's (Auto battery saver, TX Save and Auto Power Off), CTCSS encode and decode, extensive DTMF-based selective paging, seven selectable frequency Step sizes, and an LCD voltmeter so you can monitor battery performance under load and estimate remaining battery life.

The FT-51R is supplied with a 600mA/H NiCad pack, AC charger, belt clip and an efficient hand held antenna. To learn more about this exciting transceiver, why not ask for a copy of our colour brochure and 8-page colour Product News booklet, or visit your local Ham store for a demonstration.

2 YEAR WARRANTY

D 3622

NOW $699

LIMITED STOCK

YAESU

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(Local Call Charge)

FAX: **(02) 9395 1155** within Australia and
(+612) 9395 1155 from outside Australia

direct link

Visit our web site at
http://www.dse.com.au

MAIL: **DICK SMITH ELECTRONICS,** Direct Link Reply Paid 160, PO Box 321, North Ryde NSW 2113 (No Stamp Required)

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DICK SMITH ELECTRONICS

That's where you go

Yaesu's Done It Again

FT-920 HF/6m Transceiver With DSP

Now there's no excuse for not taking advantage of the latest advances in Digital Signal Processing, transceiver design plus the fun of 6m operation. The stunning new Yaesu FT-920 is a high performance HF/6m multi-mode receiver that provides 100W PEP output on the 160-6m bands, incredible front-end performance based on the FT-1000MP design, and a huge array of features that make it a pleasure to use.

At first glance Yaesu's renowned Omni-Glow LCD screen is obvious, and its wide-angle view provides a wealth of information about the transceiver's operating status with multi-function metering, dual frequency displays and an Enhanced Tuning scale for DSP bandwidth, CW tuning, FM discriminator and more. Inside, the FT-920 is built around a rugged diecast unibody chassis which provides excellent heatsinking for the low distortion dual MRF255 160-6m FET power amplifier.

For more comfortable operating when weaker signals are present Yaesu's engineers dedicated themselves to enhancement of real-world signal to noise ratios, and after thousands of hours of design and testing have produced an industry-leading 33.3MIPS (millions of instructions per second) processing speed DSP in the FT-920 that provides a two-parameter noise reduction system with 32 steps of front panel adjustment. This amazing system also provides dual control DSP passband tuning, DSP auto-notch filter, an amazing new transmit Digital Speech Processor, DSP mic equalisation, fast acting DSP VOX circuitry as well as a Contest-ready Digital Voice Recorder!

Other features include an all-band (160-6m) auto antenna tuner which also provides greater receiver band-pass protection, Direct Digital Synthesis for clean local oscillators, selectable frequency-optimised receiver front-end pre-amps, and a Shuttle Jog tuning ring for fast QSY. A Dual Watch receive system allows you to check for band openings, especially handy when monitoring 6m. Also provided are SSB/CW/FM operation (AM with optional filter), 127 memories with alphanumeric labelling, IFshift and IF noise blanker to fight interference, plus an extensive menu system for selecting most "set and forget" functions.

The FT-920 is supplied with an MH-31B8 hand mic, DC power lead and comprehensive instruction manual.

Why not call for a copy of the Yaesu 6 page FT-920 colour brochure to learn more about this efficient transceiver that's without peer in its price class.

D 3420

YAESU

2 YEAR WARRANTY

$2995

BONUS

Bonus D-3800 25A Power supply valued at $299

offer expires 31/12/97

B 3050 col

DICK SMITH ELECTRONICS direct link

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